



AFCAP



**Learning with older people about their transport and mobility problems in rural Tanzania:
focus on improving access to health services and livelihoods**

**RURAL TRANSPORT SERVICES FOR OLDER PEOPLE IN KIBAHA DISTRICT,
TANZANIA: REPORT OF PROJECT FINDINGS**

HelpAge International in collaboration with University of Durham and REPOA

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Launched in June 2008 and managed by Crown Agents, the five year-long, UK government (DFID) funded project, supports research and knowledge sharing between participating countries to enhance the uptake of low cost, proven solutions for rural access that maximise the use of local resources.

The programme is currently active in Ethiopia, Kenya, Ghana, Malawi, Mozambique, Tanzania, Zambia, South Africa, Democratic Republic of Congo and South Sudan and is developing relationships with a number of other countries and regional organisations across Africa.

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Summary: This report presents background material and a full review of project findings on rural transport services for older people in Kibaha district of Tanzania, with specific reference to:

- a) current access to health services
- b) livelihood implications of poor access to health and other services
- c) broader implications for national rural transport services.

Transport is a major hurdle for many older people in the 10 study settlements in rural Kibaha district – most particularly for their daily domestic water and fuel needs, but also for their access to health services and improved livelihoods.

The rapid spread of motorcycle taxi services has effected a transport revolution over the last few years, particularly in the nine off-road settlements [and especially where they operate in conjunction with mobile phones]. In the absence of alternatives motorcycle-taxis [*boda-boda*] have brought improved mobility – at least in emergency contexts – even for very old people, despite the high fares. However, many older people find travel by *boda-boda* a dangerous and frightening experience. It is important to explore if/how these vehicles might be adapted to make them safer and more comfortable for older people, and to examine feasible alternatives, especially in the context of travel of sick older people to health centres.

Attention also needs to be given to intra-village water and fuel transport for domestic purposes and the means by which this can be improved, so that older people are able to reduce their carrying burden and, should they wish, devote more effort to their farms. Water and fuel loads currently present a major transport burden for the younger cohort of older people [those in their 60s and 70s] and carrying is associated particularly with waist/back pain. Reduced domestic loads could raise farm productivity with consequent improvements in food availability. This would have beneficial impacts on health not only for older people but also for the many grandchildren and other young people currently in their care.

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INTRODUCTION

This report presents a full review of project findings on rural transport services for older people in 10 settlements in Kibaha district, located in Tanzania's coastal region, with specific reference to:

- a) current access to health services
- b) livelihood implications of poor access to health and other services
- c) broader implications for national rural transport services

This is preceded firstly by a discussion of key background information: the project aims and objectives and the Kibaha district context; secondly, a review of the methodology employed in the older people peer researcher training and associated field research programme; thirdly, the subsequent data analysis and review; fourthly a detailed description of older people's living conditions in the 10 study settlements. Three previous project reports provided fuller detail of individual activities: (i) a report on the training week workshop for older people (March 2012), (ii) a work in progress paper for May-July 2012, including the draft field research report as an annex, and (iii) a report of the dissemination workshop (August 2012).

AIMS, OBJECTIVES AND BACKGROUND CONTEXT TO THE PROJECT

Aims and objectives: The core research problem which this project addresses is the spatial mobility constraints faced by older men and women in Africa in accessing health and other facilities important to their lives, the lack of direct information on how these constraints impact on their well being and the well being of those in their care, and the lack of guidelines on how to tackle them. Transport and mobility are critical yet neglected dimensions of development: knowledge of the linkages between transport, mobility and poor people's livelihoods and well-being in Africa remains remarkably sparse.

The principal development objective of the project is to identify and promote mobility-focused interventions which will aid older people living in rural areas and those in their care to achieve better health and well-being. The findings will relate not only to local needs in the selected [Kibaha] project area, but nationally in Tanzania and internationally across sub-Saharan Africa. This requires a detailed, gender-, age- and disability- sensitive case study of how rural older people's access to transport currently shapes their health service access and levels of economic empowerment and how transport services could be improved to enable older people living in rural areas to access better health care and thus more effectively support themselves and those in their care. The project thus aims to contribute significantly to **AFCAP's purpose** of strengthening and promoting the [gendered] research evidence base regarding affordable transport services by substantially improving understanding of the linkages between older people's access to transport and their social development and economic empowerment and disseminating this information to policy makers and practitioners so that policy and practice in Africa are influenced positively and older people's social and economic well-being are improved.

Background literature: Our research has built on concepts and issues arising from the literature on older people in Africa, on an earlier research project focused on child mobility (www.dur.ac.uk/child.mobility) and on HelpAge's substantial practice and policy experience in Tanzania and elsewhere. Older people form a substantial key component of African populations, not least in the era of HIV/AIDs, which in many countries has left grandparents supporting and caring for grandchildren, in the context of a missing or incapacitated middle generation resulting from parental deaths and ill health (HAI 2007 re Tanzania). The official HIV infection rate in Tanzania is currently 5.7%. Unicef (2006) reported that there were c. 2 million orphaned and vulnerable children in Tanzania: 50% of these are in households headed by older people, predominantly older women. Older people comprise 4.66% of Tanzania's 41 million population; 74% of people aged 60+ years live in rural areas. In a recent child mobility study (www.dur.ac.uk/child.mobility), approximately 20% of the 1000 child respondents surveyed in each of three study countries live with people other than their parents. In South Africa, Malawi and Ghana respectively, 14%, 9% and 9% live with grandparents (usually grandmother alone); the remainder lived with other relatives/foster parents, many of whom are older people. In HIV/AIDS and other contexts, many older carers whom we interviewed lack financial support from the child's parents and struggle to provide for children in their care. HelpAge's Cost of Love study (2004), carried out in Tanzania, which focused on the negative impacts of HIV and AIDs on older people, highlights the care-giving responsibility for grandchildren older people must take on after the death of children with AIDS. HelpAge's 'Building Bridges' study (2007), builds upon the Cost of Love project in highlighting the existing gaps towards integration of older people in the HIV and AIDS interventions and goes on to demonstrate a model of how inclusion for older people and those they live with can be achieved. HelpAge and other agencies, in collaboration with local government authorities, are using the intervention model in their work. Although there is a growing literature on this role of older people as carers (e.g. Ingstad 2004; Schatz 2007; HAI 2007; Kanya, Poindexter 2009), the mobility and mobility constraints older people face, which will impact strongly on their ability to act effectively in this role, constitute a major knowledge gap (Ipingbemi 2010 presents a rare study re Ibadan city and Pettersson and Schmokker 2010 for Metro Manila). Our transport-focused findings will contribute to broader understandings of how changing inter-generational relationships (Vanderbeck 2007) affect mobility and poverty transmission issues.

Mobility, or lack of it, is likely to be implicated in many facets of older people's lives (Schwanen, Paez 2010). Income poverty, in particular, is a common characteristic of Africa's older people, especially in societies like Tanzania where governments do not provide universal social security in old age (Apt 1997; van der Geest 1998; Heslop, Gorman 2002, Barrientos, Gorman, Heslop 2003; Aboderin 2004): family support for them is assumed. The Non Contributory pension feasibility study 2010 undertaken in Tanzania by HelpAge, in collaboration with the Ministry of Labour, Youth Employment and Development, demonstrates the levels of poverty within older persons headed households and suggests that, should a non contributory pension be paid, the levels of poverty nationally would decrease significantly. The study demonstrates how a non contributory pension facilitates economic growth, cohesion in the nation and enables older people to access other services such as health services. The study goes on to demonstrate affordability and ways of finding money to pay the pension. The current National

Poverty Reduction Strategy 2011 -2015 includes a goal of paying the non contributory pension within this period.

In the current context of lack of old age social security, continuing access to livelihoods is frequently vital, not just for the elderly to support themselves, but also to support young orphans and others in their care (Clacherty 2008). Access to a secure livelihood is often particularly difficult for older people: in rural areas income from farming is frequently insecure, and is likely to become more insecure with climate change. Multiplex livelihoods and off-farm income are widely recognised to provide a route out of rural poverty (Bryceson 1999, 2002; Gladwin et al. 2001; Canagarajah et al. 2001; Yaro 2006) but livelihood diversification, especially in rural areas, often requires travel to the nearest market or service location: in West Africa this has been found to cause particular difficulties for elderly women traders (Apt et al. 1995; Grieco et al. 1996; Ipingbemi 2010; Porter 2011). Lack of reliable low cost transport and restricted mobility may severely affect older people's access to clinics, pension points (where pensions are provided), paid work, livelihood opportunities, churches, participation in social networks, and other facilities and services important to their lives, with negative impacts on their health and well-being. Long walks to access a transport route or to services are likely to present a serious hurdle, particularly to less fit/disabled older people, and especially where the route crosses difficult terrain, and in the rains. Even in larger rural service-centres, distances to required services – health services in particular - may be so long and transport so infrequent that access is low (Grieco et al. 1996, Ipingbemi 2010). Where regular transport is available, low incomes and poverty may still limit access: older people, especially women carers, often appear to be among the poorest (Kakwani and Subbarao 2007), thus probably those least able to afford transport fares.

Drawing on this literature and our prior experience, some specific points related to transport constraints needed consideration in the study:

1. Older people may face numerous difficulties when they are able to access public transport. Some of these difficulties are probably similar to those reported by children in the child mobility study cited above (harassment, being cheated on fares by operators, having to stand up and keep balance in an unstable vehicle when all the seats are taken etc.) Older travellers may also face other difficulties around specific problems sometimes associated with old age such as urinary incontinence among women due to earlier obstetric problems (e.g. obstetric fistula and related conditions).
2. The mobility and access constraints experienced by older people may impact negatively not only on themselves but also on the educational, health and livelihood opportunities of children and young people in their care and thus reduce overall long-term potential for poverty eradication. For instance, mobility and access constraints are likely to impact strongly on older people's ability to earn income, with consequent impact on their ability to feed, clothe and educate children. Access to livelihoods has been inadequately considered in an older people's context (they are often treated by government, academics and others as if they are outside the working population but they need livelihoods to survive).

3. Older people may gain access to services not only directly but also indirectly through both adults and children in the community. The relationality between children and older people's lives has been considered in general terms (e.g. Whyte et al., 2004; Hopkins and Pain 2007), but requires analysis in a mobility context (see Turner and Kwakye 1996 for a rare study of Accra). Thus, impacts on older people of other households and community members' mobility both need to be considered, especially regarding migration, which may affect indirect access to services via family helpers.
4. In some regions the demands of load-carrying on women from childhood and onwards *appear* to impact severely on health and quality of life as they enter and experience old age (though we are unaware of any published evidence base to support this hypothesis). The implications of Africa's transport gap and consequent dependence on pedestrian head-loading (often designated a female activity), has received remarkably little attention. The particular plight of older women in accessing fuel wood, water and markets needs further investigation (Porter et al. 2010 in press).
5. Road traffic accidents are a major cause of injury and death across Africa. Older people are likely to be at disproportionate risk because of age-related physical and cognitive changes (Amosun et al. 2007, Mabunda et al. 2008).
6. Very old and infirm people, in particular, may face a lack of power and access to wider decision-making processes (similar to that experienced by children). Their views are then less likely to be heard and their transport and mobility needs even less likely to be met than those of other groups.
7. We can expect considerable diversity of experience amongst older people, according to age, gender, ethnicity, socio-economic status, family composition (dependants etc.), occupational history, infirmity/health, personal mobility status, density of service provision, etc. It is important to assess how this diversity impacts on transport usage, suppressed journeys, mobility, access to services and other elements important to older people's well-being.
8. Potential routes to improving mobility among older men and women are likely to differ from those open to younger people in their communities. Bicycles usage, for instance, may be impossible for older women who have never had time/opportunity to learn to cycle. Older people with disabilities are particularly disadvantaged, such that even mobile service provision to settlement centres may not serve them adequately: adapted wheelbarrows with invalid seats might assist in some contexts (Grieco 2001).
9. Ill-health and infirmity may introduce further problems for older people, in a walking world where pedestrian transport dominates among all ages (Porter 1988; 1997; 2002a). Reduced pedestrian mobility due to infirmity and the unaffordable cost of motorised transport may help to limit older people's access to work and vital health care, thus reinforcing their poverty: a vicious circle in which mobility restrictions form a key component. At the same time, care-giving responsibilities of older people (especially

women), who have adult children affected by HIV/AIDS may require prolonged travels to care for the sick (Ssengonzi 2009).

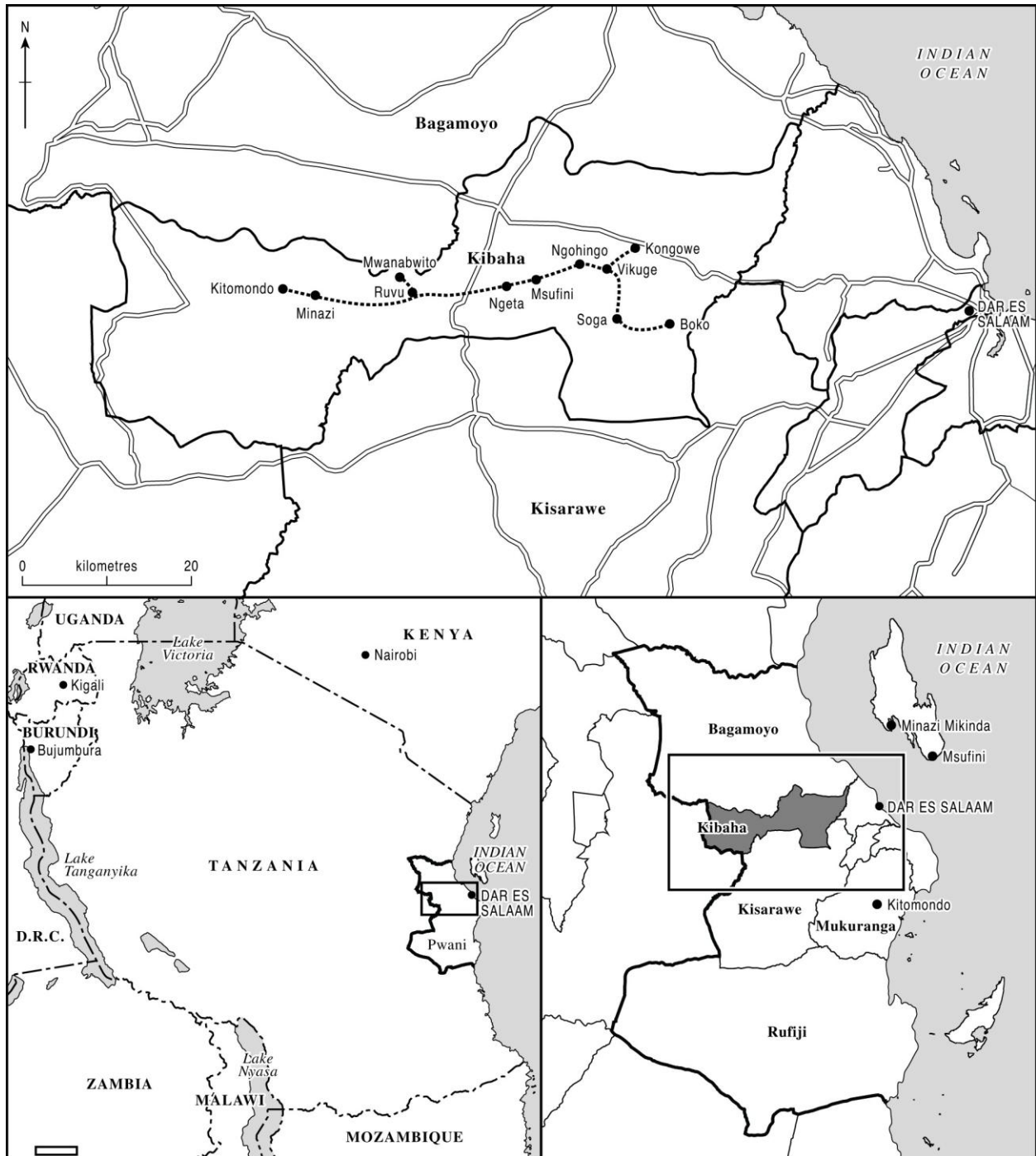
10. In the context of limited work potential, ill health and lack of social security, social bonds are likely to be essential to securing care and financial support in old age. In many African societies, giving money is a way younger kin traditionally pay respect and show affection and care for the elderly, but when the younger generation has migrated elsewhere, it may be difficult for older people to achieve the sustained interaction necessary to maintaining such links. In particular, where parents are alive and resident in town, they may prefer to keep their working-age children with them, rather than sending them to help a grandparent in a remote village (Alber 2004 re Benin). Again, mobility and access to affordable transport are likely to be key factors in sustaining social networks, though it is possible that mobile phones also now play a growing role in this respect.
11. There appears to be considerable potential for mobile phone use (expanding dramatically across Africa) to substitute virtual for physical mobility (Porter et al. 2012) to the advantage of older people in health and other contexts: current and potential uses among older people need investigation.

The following sections describe the area selected for our field research and show how we developed a field methodology to explore these issues.

THE KIBAHA DISTRICT CONTEXT

The study is focused on rural settlements in Kibaha district [Fig 1.].

Fig. 1: Kibaha district and its location in Tanzania



Selection of the district: Kibaha district was selected for this research study because HelpAge International Tanzania office has been involved in various studies in the district for some years and exhibited significant transport services issues for older rural populations associated with access to health services and other services and places important for older people's well being. In Kibaha Town and Rural Councils, HelpAge International has worked with the Good Samaritan Social Services Tanzania (GSST, an NGO that also collaborated in the project and which works closely with older people and local government). GSST had already established older people's groups in Kibaha Town Council but were still to do this in the rural council. The project has also built on knowledge gained from HelpAge International Tanzania's Easy Care study with IFAKARA Health Institute which aims to adapt and test the Easy Care Tool (ECT) through practical research, enabling health practitioners to assess and understand the health and care needs of older people against Non-Communicable Diseases and the technical suitability of the ECT: this was conducted in four districts, including Kibaha. Kibaha district thus provided a suitable research location for the project.

Pre-project review of district-wide access to health facilities: There are 18 health facilities in Kibaha District Council. These include 1 district hospital and 17 type A) dispensaries. Type A dispensaries operate 24 hours a day with maternity ward and laboratory services. Distance to the nearest health facility in this district is, on average, in the range of 8-15 km, mostly requiring travel along poor, badly maintained rural roads. Despite government's efforts to adequately maintain road infrastructure linking settlements to public services, the task is enormous and many of the rural areas (where 82% of older people live) are relatively low in government priorities.

Distance to health services and related travel costs had already been identified as likely hindrances to older people in the district accessing treatment, given their income poverty levels. The government has long-term plans to reduce the distance to a maximum of 5km to the nearest health facility but this is not likely to happen in the near future. Eight to 15 km is beyond reasonable walking distance for many older people, especially those who have health problems, and distance is thus likely to be a major barrier to treatment if there is no suitable motorized public transport available to them or they cannot afford it. Older people's income is currently very limited, though Tanzania Social Assistance Fund has started distributing cash transfers to some vulnerable groups including older people in Kibaha. These cash transfers may stimulate demand for use of public transport in health and other service access.

A pre-project review of public transport in the district by HelpAge Tanzania suggested that it was currently mainly limited to pick-ups and minibuses which ply the district's national (trunk and regional) roads. Elsewhere, in remote villages, travel appeared dependent principally on private transport. Communities were reported to experience particular difficulties transporting patients at night, especially if they need to take them to the main hospital in the area.

HelpAge's prior work with older people in Kibaha district thus suggested the following hypotheses regarding older people's transport difficulties in accessing available health services:

- Lack of any transport means whatsoever to travel to health facilities from the most remote rural locations;

- High cost, unsuitability, scarcity, irregularity and unreliability of means of public transport on routes where transport is available- (i. e. not affordable and unsuitable for older persons.)
- Poverty is likely to be a particular constraint among many older people, especially older women, who may have insufficient money to meet current costs of travel to health facilities even where transport is available.
- There may be other constraints on travel such as duties as carers, problems of incontinence, issues of travel permission from other family members and availability of someone to accompany the traveler, etc. – It is important to find out how significant these constraints are, and how they intersect with other problems.

Health and care requirements in Kibaha district: these were considered by HelpAge International to include the following:

- A need for better understanding and knowledge of the disease burden among health personnel, particularly as this relates to older people, in order to facilitate timely re-ordering of the correct quantity and type of medicines required.
- Shortage of requisite medical supplies, especially in the rural clinics.
- Tanzania is initiating the national identity card system. Most older people and their dependent children do not have birth certificates nor identity cards, making it very difficult to prove the age of the patients who qualify for free medical services (e.g. those aged 60+ and those under 5 years).
- Shortage of well-qualified health staff. There are few health workers to attend to patients, particularly in rural areas where clinics are understaffed.
- Limited working hours of clinics: rural dispensaries work only in day-time.

The study was thus aimed at exploring how transport interacts with other factors which also affect the health care needs of older people and their dependents. This includes exploration of the potential of the increasing availability of improved communication infrastructures, including cell-phones, and the use of motorcycle transport services (boda-bodas) to enable improved access to health services.

The response of health centres to older people’s needs in Kibaha district had already started to improve, following 4 years of advocacy. Now older people do not wait for long before they receive treatment once they arrive at the health facility. However, the medicines allocated to hospitals and dispensaries are not adequate to last for the whole month (i.e. problems around the re-order period). The Prime Minister, in 2009, instructed that the Ministry of Health and Social Welfare ensures that every government health facility has a room to cater specifically for older people to avoid older people queuing. This instruction has been implemented in most regions including Kibaha District. A room with a nurse has been set aside for health services to older people. Older people are not supposed to pay for health services. This decree is implemented but not in every district and it is not fully implemented in Kibaha district. As a result, older people are left to buy the medicines. In some cases, older people in Kibaha district have gone without medicines because of the inability to pay.

Selection of research sites: one core village, Vikuge, and nine additional settlements were selected for detailed study in Kibaha district (see map on page 9) :

- one village located on the paved road [Kongowe]5 villages located off-road, with a clinic [Boko, Ngeta, Mwanabwito, Soga and the focus village Vikuge]
- 4 villages located off-road, but with no clinic [Kitomondo, Msufini, Ngohingo, Minazi]

A detailed assessment of older people's living conditions was made during the research studies conducted for the project. These are described below, following prior description of the methodology employed in the study.

FIELD METHODOLOGY

Following an initial desk review of relevant literature [grey and published literature] the field methodology had three key strands:

1. *Co-investigation through older people community peer research*
2. *Qualitative research conducted by Poverty Alleviation Research (REPOA) field assistants*
3. *Survey research*

Co-investigation through older people community peer research

Twelve older people peer researchers were selected by HelpAge International in collaboration with GSST for training as peer researchers. They then attended an initial one week training workshop to develop some age-adjusted research methods with 12 older people (60+) of both genders, varied ages and along a spectrum from able-bodied to severely disabled, for use in the selected village settlement. The five-day training workshop took place from 28th February to 3rd March, close to the core study village of Vikuge in Kibaha District, Tanzania. It brought together twelve older people researchers from Vikuge village, five research assistants from REPOA based in Dar es Salaam, the Director of Good Samaritan Social Services Tanzania (GSSST), staff of HelpAge International Tanzania and London, and the lead researcher from Durham University, UK. A national transport engineer, Abdul Awadh also joined the group on the last day to contribute to analysis of initial information gathered during fieldwork exercises. The training workshop was led by Amanda Heslop, an experienced HelpAge International trainer.

The central purpose of the training workshop was to build the skills of the older researchers and research assistants to carry out a series of interviews in the study focus village, and to gather initial information about the transport and mobility problems of older residents. Their feedback on the questions and methods tested out informed further development of the methodology for further research in all ten research settlements. The research assistants worked with, supported and learned from the older researchers throughout the training and fieldwork, in preparation for their continuing role in the research. The workshop included three half days of fieldwork practice in Vikuge village, during which the research teams tested interview methods for generating qualitative information on the following themes: daily livelihood and health journeys made by older persons; impacts of seasonal changes on transport and mobility; and means of transporting household produce, water and fuel by household members in which older people lived alone or with grandchildren. As well as practicing and testing out the methods, participants engaged in regular synthesis and discussion of information gathered. On the final day, having expressed their desire to continue with the study, older researchers planned further information gathering activities for an additional two weeks. REPOA field RAs were also trained during this workshop week, to ensure they were able to provide adequate support to the older people researchers and to supplement this work with additional research, especially in the 9 additional villages [see below].

Field qualitative research by the 12 Older People Peer Researchers (who had been trained by

HelpAge International) was subsequently conducted in March and April 2012. Their work was supported principally by Mr Elisha Sibale of Good Samaritan Social Services Tanzania [GSST, a HelpAge International partner], with logistical support from HelpAge International country office. Peer researcher interviews were focused on Vikuge, but with additional in-depth interviews in all survey settlements. The data presented by OP [Older People] peer researchers at the training workshop and those they collected through their preliminary interviews in the field shaped the questions we included in the questionnaire survey. In total they conducted 74 interviews with older people, including seasonal calendars and related activities focused on transport issues.

Qualitative research by REPOA research assistants

In addition to the peer researcher's qualitative interviews, qualitative interviews were also conducted by the REPOA research assistants (RAs) using the check lists prepared by Gina Porter [Durham University], which drew substantially on findings from the training workshops with the Older People Peer Researchers and some preliminary field research. REPOA research assistants (who had been trained by Gina Porter during the two training weeks) then interviewed older men and older women in each of the 10 study settlements, plus some key informants, notably clinic staff and motor-cycle taxi [*boda-boda*] operators. Their interviews covered health-related transport issues, and livelihoods related transport issues. In total 194 in-depth interviews were conducted [i.e. including some key informant interviews by Gina Porter and by Mandy Heslop, the trainer on the Older People workshop training week]. These were transcribed and copies of each interview e-mailed to Durham.

Total numbers of in-depth qualitative interviews conducted, by settlement

Settlement	No. of peer research interviews	No. of other in-depth interviews [REPOA/UK interviewers]
Boko	3	20
Kitomondo	8	11
Kongowe	3	21
Msufini	4	20
Ngeta	6	26
Ngohingo	9	8
Minazi	8	17
Mwanabwito	2	23
Soga	4	23
Vikuge	30	25

Quantitative survey research

A questionnaire survey was prepared by Gina Porter, drawing on the preliminary qualitative research findings. This was piloted and revised during the second field training week. It was administered by the REPOA RAs to older people in all 10 study villages: our aim was to have a minimum of 30 completed questionnaires per settlement but in some villages this was not possible since the total number of older people present at the time of the survey was under 30 [see research report in Annex 1]. In total 339 valid fully complete questionnaires were obtained. These were then sent by DHL to UK by HelpAge International for data entry and analysis.

DATA ANALYSIS AND REVIEW

Data analysis was conducted in the UK by Gina Porter in the first instance, with findings subsequently presented for discussion and review with HelpAge International and REPOA staff in Dar es Salaam. Further review with the older people peer researchers and other stakeholders took place at a subsequent workshop in Dar es Salaam [see below].

Qualitative interview data from the peer research studies and the RA researcher interviews were analysed thematically and the information for key themes triangulated with findings from the SPSS survey data analysis [below].

Survey data analysis: Completed questionnaires (339 valid cases) were entered into SPSS 17 [Statistical Package for the Social Sciences] by two postgraduate students in Durham University Anthropology department with supervision and a subsequent data check by Gina Porter. Statistical analyses were then conducted [principally cross-tabulations] for key themes, drawing on data for c. 250 variables. The survey population exhibited the following characteristics:

Sex distribution of surveyed population: 61% female; 39% male- this is probably a fair representation of population distribution by sex aged 60+ in the survey settlements

Age distribution of surveyed population [again this is probably a fair representation of overall patterns in the survey settlements]:

60-65=31.9%;

66-70=16.8

71-75=15.6

76-80=14.7

81-85=7.1

86-90=9.1

91-95=2.4

95+=2.1

Marital status: under 1% single, 47% married, 40% widowed, 12% divorced

Settlement distribution of questionnaires:

See table below. Where the total number is under 30 [Msufini, Ngohingo, Kitomondo], observations on a settlement basis are difficult, though REPOA enumerators reckon they interviewed every 60+ resident in these locations so they are arguably the total population, not a sample, in these cases.

SETTLEMENT X SEX of respondent Cross tabulation

		Sex of respondent		Total
		F	M	
VIKUGE	Count	27	18	45
	% within SETTLEMT	60.0%	40.0%	100.0%
	% of Total	8.0%	5.3%	13.3%
NGOHINGO	Count	10	9	19
	% within SETTLEMT	52.6%	47.4%	100.0%
	% of Total	2.9%	2.7%	5.6%
MSUFINI	Count	8	5	13
	% within SETTLEMT	61.5%	38.5%	100.0%
	% of Total	2.4%	1.5%	3.8%
NGETA	Count	15	18	33
	% within SETTLEMT	45.5%	54.5%	100.0%
	% of Total	4.4%	5.3%	9.7%
MINAZI	Count	30	6	36
	% within SETTLEMT	83.3%	16.7%	100.0%
	% of Total	8.8%	1.8%	10.6%
KITOMONDO	Count	19	8	27
	% within SETTLEMT	70.4%	29.6%	100.0%
	% of Total	5.6%	2.4%	8.0%
KONGOWE	Count	18	23	41
	% within SETTLEMT	43.9%	56.1%	100.0%
	% of Total	5.3%	6.8%	12.1%
SOGA	Count	29	13	42
	% within SETTLEMT	69.0%	31.0%	100.0%
	% of Total	8.6%	3.8%	12.4%
BOKO	Count	26	13	39
	% within SETTLEMT	66.7%	33.3%	100.0%
	% of Total	7.7%	3.8%	11.5%
MWANABWITO	Count	24	20	44
	% within SETTLEMT	54.5%	45.5%	100.0%
	% of Total	7.1%	5.9%	13.0%
Total	Count	206	133	339
	% within SETTLEMT	60.8%	39.2%	100.0%
	% of Total	60.8%	39.2%	100.0%

A draft field research report [with associated analysis] was then prepared by Gina Porter, drawing on the whole set of qualitative and quantitative data available from the field studies, including the work by the Older People Peer Researchers. This report was circulated to HelpAge International and REPOA for discussion and comment, prior to subsequent in-country meetings

and the stakeholder review workshop in August. Inputs received from HelpAge International [UK and Tanzania] were included in the Policy Issues section.

Review of findings at the Launch and Dissemination Workshop

The August stakeholder launch and dissemination workshop was organised by HelpAge International and held in Dar es Salaam to further review our findings with a wider stakeholder group and consider further steps. Full details are available in a separate project report. Originally it was planned to hold this workshop in Kibaha district, but HelpAge International country office made the decision to move the venue to Dar es Salaam because of the need to ensure the participation of national as well as local stakeholders. All the peer researchers and other key stakeholders from Kibaha district were transported to the venue in Dar es Salaam for the one-day workshop.

At the meeting a total of 42 participants including the older people peer researchers, the Kibaha local government officials, officials from the Ministry of Health, Ministry of Transport, older people's organizations and stakeholders from the transport sector, the media, IFAKARA, Economic Social Research Fund and REPOA, National Institute of Transport and other CSOs were present.

Following presentations of research findings, the participants were divided into four discussion groups, each comprising some of the older people peer researchers, together with other participants. The discussions were conducted in Swahili. A final plenary brought together the individual groups' conclusions so that a broad overview regarding perspectives on the findings and key potential interventions could be obtained.

PROJECT FINDINGS: BACKGROUND INFORMATION ON OLDER PEOPLE'S LIVING CONDITIONS IN THE 10 STUDY SETTLEMENTS

Basic living conditions

Fuel, electricity, drinking water and sanitation availability are all significant factors shaping older people's living conditions in the 10 study settlements. The survey data [N=339] indicate the basic patterns of availability:

Main fuel of household: 94% wood; 6% charcoal

Electricity, availability in the house: 97% none; 2.4% mains electricity or generator [highest in Kongowe where 12%]

Sanitation: 83% private latrine; 13% shared latrine

Drinking water availability to household: 2% piped water to dwelling; 9% piped water to compound; 14% community standpipe; 44% well; 14% surface water only [river, stream etc.]. Kongowe town has substantially more piped water and local standpipes than other settlements [44% to dwelling or compound; 46% community standpipe]. In Ngeta 100% households depend on well water, 89% in Ngohingo and 80% in Soga.

Qualitative data confirm this picture for drinking water particularly strongly. A peer research interview with an older man, Ngohingo, for instance, notes: *water wells dry up completely during the dry season therefore we have to buy water at 500 TSh per 20 litre gallon, otherwise you will have to try your luck by waiting [at the] wells at 4 am.* [TSh 1,000 = approx £0.40] A woman of 78 years whom the peer researchers interviewed in Ngohingo said she pays 400 TSh to have a bucket of water carried from Vikuge to her house in the dry season.

Living arrangements also strongly impact on older people's well being: 12.1% of women are living alone, 10.6% of men. Those living alone or caring for orphaned grandchildren tend to be the most vulnerable older people. Survey data indicates that the majority of older people live in households together with between 1 and 3 other residents. In Vikuge there are reportedly 97 orphans, the majority of whom are cared for by older people. There are some contradictions in the questionnaire data that make it difficult to confidently assess the number of older people who are sole carers of children under 18y – many older people said they were sole carers but then listed their adult children as present within the same household. In some cases this appears to be because the grandchildren for whom they see themselves as sole carer belong to a different child who is not present – nonetheless, this was the least satisfactory element in the survey.

Road access, transport and local service availability [for health see separate section below]

Settlement	Road access	Surveyed Older People homes located over 15 mins walk from regular transport	No. of boda-boda operators	Other motorised transport regularly available	Market	Grinding mill
Boko	Usually passable	5%	c. 25	One vehicle available in emergencies?	No, travel to market at Mailimoja or Picha ya Ndege [12 km]	No, nearest at Soga [6km]
Kitomondo	Sometimes impassable in rains [March-June]	0%	10	None	No, nearest main market is Mlandisi	No, nearest is at Ruvu
Kongowe	On paved road	0%	Very large no.	Yes, buses, minibuses	Yes	3 small mills
Mzufini	Difficult in rains [April-May]	38%	8	None	No	No, take maize to Kongowe or Soga
Ngeta	Usually passable	54%	20	Train to Mwanza stops here Tues, Fri	No, go to Mlandisi [16 km distant]	No, take to Mlandisi
Ngohingo	Usually passable	5%	5	None	No	No [broke 2 years ago, take to Kingowe]
Minazi	Seasonal - impassable on black cotton soils in rains [March to May]	22%	16	None	No, go to Mlandisi	No, take to Mlandisi or Dar
Mwanabwito	Sometimes impassable in rains	20%	6	None	No, go to Mlandisi	No, take to Mlandisi or Dar
Soga	Difficult in rains	24%	12 or more	None	No, go to Mlandisi	2 mills
Vikuge	Usually passable [Short-term problems on Kongowe road in rains [badly potholed near Kongowe]	4%	c. 20	A pilot bus service (Vikuge-Soga) reportedly withdrawn as people took boda-boda instead of waiting for the bus	No, nearest at Kongowe	No, take to Kongowe [6 km]

PROJECT FINDINGS WITH SPECIFIC REFERENCE TO CURRENT ACCESS TO HEALTH SERVICES

The findings below show that current access of older people to health services is substantially constrained by their poor access to transport services (affected both by cost and availability issues). Only just over half of our survey settlements currently have dispensaries: Kongowe (this roadside settlement has 2 clinics), Vikuge, Boko, Ngeta, Mwanabwito and Soga. The remaining four off-road settlements lack any form of dispensary/clinic. Even in the case of older people resident in settlements with clinics, many have poor access due to residential location at a distance from the clinic and/or other factors such as infirmity and associated limited mobility. Moreover, as the table below shows, presence of a clinic does not necessarily imply availability of required medicines.

Clinics in the survey settlements

Settlement	Location of health facilities and associated transport costs
Boko	Dispensary. Medicines available at village shops. No ambulance. Boda-boda to Tumbi costs 5000 sh. return.
Kitomondo	No clinic Nearest clinic: Ruvu station, c. 8km distant. New clinic under construction. Transport cost to clinic: 3000 sh. return by boda-boda.
Kongowe	2 government clinics: 1 has 11 staff, including 4 doctors No ambulance for referral to Tumbi [main district hospital].
Msufini	No clinic. Nearest clinic: Vikuge, c. 5 km. Transport cost to Vikuge clinic: 4000 sh. return by boda-boda
Ngeta	Clinic, but drugs have to be purchased from Mlandisi Transport cost to Mlandisi for drugs: 3000 sh. by boda-boda [6000 return] No ambulance. Referral to Mlandisi requires 20,000 sh contribution.
Ngohingo	No clinic. Nearest clinic: Vikuge, c. 1km [500-1000sh one way by boda-boda].
Minazi	No clinic. Nearest clinic: Ruvu c. 4km. [but few medicines, so Mlandisi 28 km away is preferred.] Transport cost to Ruvu clinic: 2000 sh. by boda-boda [4000 return] Referral to Mlandisi requires 20,000 sh contribution.
Mwanabwito	Dispensary with 4 employees, including 1 doctor. Dispensary has a bicycle. No ambulance for referral to Mlandisi.
Soga	Dispensary with 4 employees, including 1 doctor. No ambulance. Referral to Mlandisi requires 20,000 sh. contribution.
Vikuge	Dispensary with 1 doctor. No ambulance- has to be called from Mlandisi.

TSh 1,000 = approx £0.40

The questionnaire survey captured many aspects of *older people's use of health services* in the 10 settlements:

Older people accessing health services in the last month: F=38%; M=47%

Older people accessing health services in the last 12 months but not in the last month: F=46%; M=34%

Older people only accessing health services over a year ago: F=14%, M=18%

In the month prior to the survey, figures for use of health services were highest in Msufini [58%] and Vikuge [57%] – it is notable that Vikuge has a clinic but Msufini does not [but total numbers surveyed in Msufini are very low]. Lowest use was in Minazi [26%] and Kitomondo [31%], neither of which has a clinic. There was no clear pattern of usage by age.

Respondents who had used health services within the last year were asked in the survey about their reason for going, the type of health centre used and the time it took them to get to the health centre. The main stated reasons for seeking health advice/treatment were: malaria [17%], swollen joints/leg problems [11%], 'fever' [10%], blood disorders [9%] digestive problems [8%] waist/back pain [6%]. Surprisingly, diabetes was recorded as the direct cause of a health seeking visit by only one woman and one man, though it is clear from in-depth interviews that diabetes is a common illness among older people. The majority of older people used a local clinic/dispensary [F=62%; M=66%]. Most respondents took between 15 and 45 minutes to reach their place of treatment. There was no discernable pattern by age.

Time taken to reach clinic on most recent visit

	Under 15 min	16-45 min	46-90 min	91-180min	181-240 mins
F	13%	42%	19%	7%	5%
M	19	42	12	19	8

A majority of both women [60%] and men [70%] travelled to the clinic alone, or otherwise with another adult. Very few [under 2% for women and men] were accompanied by children.

The *cost* of the journey varied considerably, but nearly half walked to the health centre [F=47%; M=46%] while 29% of women and 23% of men travelled by boda-boda [motorcycle taxi]; 4% of women and 5% of men by bus; 3% of women travelled by bicycle, 6% of men by bicycle and just 3 women by bicycle taxi.

The *dominant travel mode* was walking or motorcycle taxi for all age groups, but for many older people walking is the only option, despite infirmity, because of the cost of the boda-boda: *I have problems with my leg so I can't walk far. Even going to the nearby clinic, I can sit four times. And then there is no medicine..... I also have asthma so when I walk I have to use a stick. So most of the diseases, because of poverty, sometimes you feel that God doesn't love us. As you see me here, the whole day I sit here.* [Woman 80+y, Vikuge].

Walking journeys predominated particularly in Soga [68%], Ngeta [67%] and Mwanabwito [60%]. There was one clear variation to that general pattern of travel to clinic: this was in Kongowe, where only 16% walked, while 31% used the bus, 25% boda boda and 22% minibus. More transport is available in this large settlement at the paved road and bus travel is not only more comfortable but also cheaper than boda-boda travel, which probably explains its dominance.

All respondents [whether they had accessed health services in the last year or not] were asked what they viewed as difficulties in seeking treatment at a health facility. Fees to see the doctor [henceforth called user fees] and medicine costs were a problem for 59% of women and 64% of men. 47% of women and 48% of men referred to travel *difficulty*¹ [every person in Ngeta] and 35% of women and 39% [91% in Ngeta] referred to travel *cost*. Service quality was a problem for 20% of women and 26% of men; preference for traditional treatments was expressed by just 17% of respondents. There was no particular pattern by age.

Respondents were then asked in the survey what was their *principal* difficulty in accessing health services (main reasons shown below):

PRINCIPAL DIFFICULTY	None	Travel difficulty	Travel cost	No one to accompany	User fees/medicines cost	Quality of service	Preference for traditional healers etc.
F	31%	9%	5%	3%	37%	5%	6%
M	37	7	6	2	31	11	3
Total	34	9	6	3	35	8	5

Preference for traditional healers is low, and may be more often a last resort when older people have no funds for travel, or when hospital treatment has been ineffective [according to the village chair, Vikuge]. In qualitative interviews use of traditional healing and local herbal remedies are mentioned as an option more often in Mwanabwito than elsewhere, perhaps because here the clinic seems to be particularly short of medicines, but also there appears to be a concentration of healers in one hamlet: *traditional healers are at the village called Kisabi, though most [of them] are doing superstition.* [Woman 77y, Mwanabwito]

Of the difficulties indicated, user fees clearly dominate as the most important barrier, with travel difficulties and cost of travel lower down the scale. By settlement, travel *difficulties* were particularly important in Ngeta [21% despite the fact that Ngeta has a clinic] and travel *cost* in Msufini [23%]. Many residents within the village area are still living some distance from the clinic and if referral is needed to a hospital outside the village the travel hurdle is even greater. Even after older people are attended to at their local health centre, there may be a need to travel elsewhere to obtain medicines:

¹ The term '*Travel difficulty*' was related to difficulties of finding transport and using it i.e. physical travel, as opposed to *cost* of travel.

They can say, 'go and buy medicines. We don't have medicines here.' [Woman c.80y, Vikuge]

We do not have enough medicine and we do not have a pharmacy here - people have to go to Kibaha mailimoja which is about Tsh 4000 one way [by boda-boda] so as to get some medicine. [Clinical officer, Soga dispensary]

Clearly, where travel difficulties and travel costs add an additional burden to high user fees, the barriers to health service access are enormous and may put an older person or their family into serious financial difficulties. The issue of health centres charging for services that older people are supposed to receive without payment was a frequent complaint: *Free medical service is spoken about but not practiced – it's political rather than practical!* [Settlement leader interview].

This is evident from the qualitative interviews which reveal important detail. In one of the villages, for instance, we were told by a village leader that, despite the presence of the dispensary for more than a decade, healthcare for older people is not given any priority there: *The government is supposed to provide free medicines to older people but there is not enough for them, so the policy of free treatment is meaningless. We are impelled to contribute to the community Health Insurance fund. ... If you need hospital they refer you to Tumbu. If they prescribe here some drugs you have to buy in Mlandisi. [prompt: how do older people obtain the drugs?] They send their children- and some walk [themselves] to Mlandisi. [In emergencies] the clinic doctor calls an ambulance from Mlandisi but you have to contribute for fuel- Tsh 20,000 towards the fuel. [What if older people don't have anyone to pay this?] I haven't met that case. The village committee will contribute – they won't leave a person to die. If they are ill here, we will bring them to the clinic by boda-boda.*

A nurse at this clinic confirmed much of the foregoing, *'Working in the remote areas is not easy as we do not have enough medicine, we do not have an ambulance to carry people to Mlandizi Hospital when they are in a critical condition and we are not paid even when we work overtime..... The only, I can say, reliable transport available is bodabodahowever usually it is not a good experience as riding on a bodaboda is not comfortable... When we call an ambulance a patient has to contribute Tsh. 20,000/= which is being paid by the relative.*

In those villages without a clinic, it seems that many older people simply do not bother to attempt travelling to access health services. In Minazi for instance, where there is only a seasonal road and in the rains there are sections on the black cotton soil where no vehicles can pass. *In the rains even the boda-boda doesn't go. You have to carry the sick person on your back and ferry them across the stream till you get to where the boda-boda is available.* The Boda-boda charge to the nearest small dispensary is *Tsh 2000* but if a hospital visit to Mlandisi is needed after 7pm it costs *Tsh 10,000-15,000* by boda-boda. As one very old man sitting in this village with a group of farmers by the roadside commented, older people have to use the boda-boda if they wish to access a clinic: *You have no choice. You may call the ambulance from Mlandisi but you pay fuel Tsh 20,000 so the boda-boda is cheaper. I've not seen an ambulance this year [all agree].... [and] if you've no money you won't get medicines.... If you pay Tsh 15,000 here to Mlandisi you still need money to get treatment even though the older people are supposed to be free.*

In Kitomondo, where the road is often difficult to negotiate because of flooding in the wet season, there is a similar story: *At the creek water reaches chest height so you can only cross if prepared to wade [people carry their clothes on their head and wade across]. The boda-boda are waiting on the other side to pick people up..... [Prompt: If there's an emergency?] We carry them on a bed. I once walked 5 hours to Mlandisi carrying someone with a crocodile bite because there was no transport- that was before the boda-bodas- we carried him on a bed. The boda-boda has saved us much now.*

Even in Vikuge, which has a dispensary and is located only 6km from the main paved road to Dar es Salaam, travel for health purposes is a regular concern among older people. A woman in her 80s in the village described some of her typical journeys: *I go about twice a month [to the dispensary, on foot], depending on what the doctor says. Sometimes I go during the night - when I'm very sick. Our neighbours would come and bring medicine or we'd borrow money from other people and take a motorbike to the same dispensary. It costs TSh 500² each way. There was a time I went to Dar es Salaam hospital. I had to take a bus from Ubungo to Kinondoni and another to Mwananyamala. Her journey cost TSh 2,900 shillings in total, just one-way [Vikuge to Kongowe by motorbike TSh1,000 sh.; bus from Kongowe to Ubungo Tsh1,300; bus from Ubungo to Kinondoni TSh 300; bus from Kinonloni to Dar (Mwananyamalay) TSh300]. At this point her husband interjected: *This can take four hours one way because the bus stops so many times. Sometime the bus is full and so you stand until you reach there.**

When a patient is very ill or very infirm, boda-boda travel is particularly difficult and the assistance of an extra passenger to hold them is essential [though travelling with 2 passengers is against the law]: *I am sick everyday ... I went to Mwanabwito dispensary. I went with the bodaboda but I couldn't sit on my own - one person has to sit at the back to hold me due to the back pains I have. My grandson is the one who paid for the transport and medical cost. [Woman 77y, Mwanabwito]*

Family members are commonly cited as the ones who pay for boda-boda transport of their elderly relatives in health emergencies, though if there is no family, communities often provide assistance perhaps especially in small, remote villages such as Kitomondo: *During emergencies the community helps so they will ask the boda-boda owner not to charge immediately – you pay later. For a car it's expensive TSh20,000 to 30,000 from Mlandisi to the tarmac. The majority of the people in the neighbourhood will contribute to these emergency trips contribution [kuchangia] is a must. You have to be aggressive in collecting the funds- you insist they should do so in case it happens to **them**. So they go inside and fetch the money. [Settlement leader, Kitomondo]*

Similarly, in Msufini, for older people who get sick and have no family support or whose families are extremely poor, the village government organizes contributions for transport and other expenses. *The last time we had to do it was last year. July. It was an old man. We had to take him to Kongowe first, but had to cover [potential travel cost] for Tumbi, in case there was no medicine at Kongowe. - But he got it, fortunately he got it at Kongowe so no need for Tumbi. About 4 people helped [with the money]. The owner of the motorbike gave the journey for free*

² TSh 1,000 = approx £0.40

but we had to pay for medicines ...He had abdominal pain.... the relatives were here but are very poor.

LIVELIHOOD IMPLICATIONS OF POOR ACCESS TO SERVICES

In the current context of lack of old age social security, continuing access to livelihoods is frequently vital, not just for older people to support themselves, but also to support young orphans and others in their care. Transport, health and livelihoods are interconnected in many respects: good health enables older people to work to support themselves and those in their care while, at the same time, access to livelihoods provides the funds to pay for health care. Access to good health services is likely to bring improved well-being and to enable many older people to work well into their 70s, an important factor in communities where the caring role of older people is so significant.

For many older people, health problems bring substantial associated livelihood problems. In particular, these problems are associated with the domestic load carrying which is necessary in order to maintain the household and thus enable people to go about their daily business of making a living. Unless children or grandchildren are available to assist on a regular basis, these tasks – carrying water, firewood, food from the farm etc. - are a major hurdle. This is discussed in some detail in this section.

Livelihoods, labour and transport issues

Income sources among older people are limited. Farming is the main occupation reported. The survey found 83% of respondents were farmers i.e. 80% of women, 89% of men in the survey; just 11% reported that they were unemployed, while 2% were retired/pensioners. [There were some other minor categories]. Farming is the occupation of over 70% of older people surveyed in all individual settlements and 90% in Kongowe [despite its relatively urban character].

Of those 87% older people recording an occupation, over half [52%; i.e. F=47%, M=67%] said they work full-time. Crops grown include cassava, maize, lentils, rice, pumpkin, cowpea and cashew: only a few older people keep cattle or other livestock. Other occupations were rare [trading 1.2%, charcoal burning (by men in the dry season) 0.6%]. In qualitative interviews mat weaving, road mending and local beer production were also mentioned as seasonal occupations.

Limited livelihood opportunities can be related in part to *educational levels*, which are low in the study settlements. 72% reported that they had had no education [83.5% of women, 47% of men]; 6% some primary education [F=8%, M=29%]; 8% completed primary [F=5%, M=16%]; 1.2% had secondary education; 0.9% tertiary. This clearly has some influence on livelihood opportunities.

Pensions and other grants and remittances help some older people substantially, but 82% say they have no pension or any form of grant [F=78%, M=87%]. Just 11% reported in the survey that they receive remittances [F=15%, M=4.5%] and 4% pensions. A few respondents in qualitative interviews referred to conditional cash transfer from the Tanzania Social Action Fund [TASAF], but usually to say they did not receive it. The survey data suggests that women are slightly more likely to obtain external support than men. Remittances mostly come from children in Dar es Salaam or other towns and are mentioned in many qualitative interviews – they are often to help cover the cost of caring for grandchildren left with grandparents in the village, which may also explain why a higher proportion of women than men receive

remittances. Remittances are often irregular, however, which is why they may be more widespread than the survey data suggests. For men, as for women, they can play a critical role in survival: *They send money once or twice per month [from town]. I use the money to pay for food and medical insurance (CHF) [Man 82y, Vikuge, living alone]*

Land ownership and cultivation: although farming is the major livelihood source for most older people, land ownership and cultivation is relatively modest – according to the survey 10% women and 11% men own under 1 acre; 48% women and 30% men own just 1-2 acres; 24% women and 30% men own 3-5 acres. However, only 11% women and 4% of men own no land. In terms of land acreage, cultivation levels are considerably lower than ownership – 26% of women and 22% men cultivate less than one acre; 50% women and 52% men cultivate just 1-2 acres, according to the survey. In qualitative interviews, older people frequently put the portion they cultivate at only one-half or one-quarter of their total land, and emphasizes that this is because of their limited strength to cultivate, the expense involved in employing labour and the cost of inputs [fertilizer and seed etc.]. Thus, for example, a Ngohingo respondent, a married man of 73y observed, *I own 4 acres of land and cultivate only 1 acre [helped by his wife] ... The problem is always my body gets tired and hunger.*

Although specific disability-associated reduced ability to work is reportedly relatively low (75% record no disability, while 6% report leg pains, 6% eye problems and 5% waist pain as disabling factors), an energy deficit, associated with age, poor health and possibly also limited access to food, is evident in many cases:

My last illness was last month. I went for waist pains treatment and hand numbness treatment. I was given medicines which I used for two weeks. In the beginning I was okay but as the days go on I still have some pains on my waist, but I think it is because I am continuing with farming activities, and to tell you the truth my daughter, I cannot stop farming because without farming I won't get food for me and for my family. [Woman 60y, Boko]

Labour: In the absence of funds, employment of farm labour is impossible: only 14% of older people reported employing labourers on their farms [F=11%; M=17%]. Many older people, men and women, say that they depend substantially on children and grandchildren to help with their farming (and with many other domestic activities - see section 5 below). Many children and older grandchildren observed both a material and a moral obligation to help their elders: *I am living with my wife and son of 3, my mother aged 55 and my father aged 60... I am responsible for them in material support, in cash and all other issues.. [Man 31y]*
I started business in 2009 [as a motorbike-taxi operator]. I am living with my grandfather 80 years old, he is not doing anything because of legs problem... [he] has land of 2 acres which I use to cultivate different food crops... [Man 30y, unmarried].

The assistance of children and grandchildren was evidently in most cases much appreciated:

My husband has got three children from his first wife and I thank God they look after us very well. [Childless woman 69y, Kongowe]

I can only just pick rubbish round the house only. I am just [able] to enjoy talk with my grandsons and laugh with them- this is the only thing I can enjoy much. [Widow 80y]

Moreover, many older people recognize that their children have challenging lives and try to work cooperatively with their families. As one 73y old widower observed, *I am living with my grandson aged 14. Now he is riding motor-bike [i.e. he is a boda-boda operator]... I fetch water, firewood .. only cooking is done by my grandson [and carrying] groceries.* In particular, most say they respect the need for young grandchildren of school age in their care to attend school regularly, and do not expect assistance during school hours: *My grandchildren are at secondary school. I can only get water at weekends when they come from school. So I have to use water very carefully*'. [Man c. 80y, daughter lives in Dar] Those older people without immediate family resident nearby are often in a more difficult position: *For older people who have no grandchildren, lack of people to support them, they have to plead, plead to get someone to go grind maize for them.* [Settlement leader, Kitomondo]

Kibaruwa: Quite a considerable portion of older people have such a lack of resources that they are forced to undertake *kibaruwa* [casual wage labour]: this is especially the case when people need immediate cash. *Kibaruwa* rates cited in Vikuge were TSh 3000 per day and in remote Kitomondo TSh2000 per day. Despite their age, 19% of women and 38% men said they undertake *kibaruwa* to earn money and specifically in the last year 23% women reported doing *kibaruwa* and 45% men did *kibaruwa* [which somewhat contradicts qualitative discussions where there was a general view that among OP there were more women than men involved in *kibaruwa*].

I do not do serious planting due to my age... [but] I go to other people's farms and work as a casual labourer and get some money. [Widower c. 80y, Vikuge]

When I don't have some money I have to find a place where they hire people to dig and work as a casual labourer, so that I can get money to feed my grandchildren and me. [Widow 66y with care of 4 grandchildren, Vikuge: she also farms and cooks and sells porridge to school children]

One of the peer researchers, recounting the story of an old woman who still farms but also labours on other people's farms reflected: *It is very sad to see this very old lady to go to work as a labourer to the shamba as she is 90 yrs old or more. Tears fell from my eyes while I was interviewing her.*

Livelihoods and markets: Livelihoods are clearly somewhat differentiated by gender. The survey data suggests that while older women may have slightly less access to both land and labour than men, because many have principal charge of grandchildren whose parents are living in town, they are slightly more likely to receive remittances. However, for almost all older people we encountered, making a livelihood is extremely hard work. Given the size of cultivated plots, the majority do not have surplus produce to sell (especially those with young grandchildren to feed). Moreover, as the table in section 2 indicates, there is little transport available for carrying substantial loads from the villages to the major roads and markets. Instead, those older people who have a surplus tend to wait for traders to visit them, where they are likely to receive farm gate prices much lower than those available in major produce markets:

The buyers come to the farm to buy [my] okra. [Woman 77y, Mwanabwito]

I have some cashew nuts trees so when I am harvesting I use to sell them, and the buyers are coming to my home to buy it. [Man 84y, Soga]

In Msufini, young men buy charcoal from older people and take it to market at Kongowe. The older people reportedly sell it very cheaply at c. TSh5-6,000, whereas they would get more at the

road – TSh8-10,000. The boda-boda is expensive – TSh2,400 for passengers and TSh1000 for the load - so the young men use bicycles in order to realize a profit, whereas older men find bicycles too difficult to ride when loaded with charcoal [man 71y, settlement leader].

Similarly, a group of young farmers at Minazi Mikinda observed:

For fruit and vegetables you take them directly to Dar but the main product here is rice and the big buyers come here. Small vehicles – fuso- small lorries, come here to pick up rice. They come here and the farmers pay the freight cost when the rice has been sold in Dar. They come only when they are needed. They travel to various villages and fill up. Sometimes we phone[them]. The fuso lorries come from Dar – they are transporters. [Prompt: Do older people use fuso too?] The old people don't travel to Dar – they sell their produce here. They can't afford the transport.

The same situation prevails in Kitomondo: *Old people don't go to markets. Traders come from Dar and buy okra in 20kg bags from the older people...so older people don't have to travel. Even if they wanted to travel, there is no transport. It would cost TSh3000 to go to Dar as fare for a parcel of 50 kg okra. ...Older people prefer to sell here. Youth go to Dar to sell.* [Settlement leader].

While motorcycle taxis (boda-boda) services have very substantially improved general access in rural settlements with poor road access and are especially valuable in emergency contexts, it would seem they cannot carry large loads at sufficiently low cost to enable most small farmers to travel with their harvested products direct to major markets. However, a few fitter older people in most settlements refer to hiring a boda-boda to carry [higher value] produce occasionally to nearby markets. One woman [65y], for instance, described how she took chickens to Kongowe for sale from Vikuge by boda-boda [one boda-boda for herself, one for the chickens], while a man of 62y in Vikuge hires a boda-boda to sell milk in Kongowe or Soga markets and a man of 67y hires a boda-boda to take his coconuts and oranges to town for sale.

It would probably need a cooperative transporting and marketing organization to make direct market sales on any scale a feasible option for older people, especially where lower value products are concerned. In Msufini and Boko reference was made to selling cashew through a cooperative union [cashew is a crop owned principally by older people because it takes so long to grow]. In Msufini a lorry comes to collect cashew and takes it to the cooperative centre at Soga. In Boko the cooperative marketing arrangement may be less satisfactory due to delays in crop purchase [interview, village executive officer]. Nonetheless, the viability of a cooperative marketing approach for other crops [possibly in conjunction with bulking by motorcycles] would be worth examination.

Transport in domestic contexts: load carrying and its implications for livelihoods, health and well-being

Transport is needed to access a wide range of services and goods and for social visits- these may involve walking, cycling or motorized transport. However, transport is also needed for domestic tasks such as carrying water, firewood, refuse and farm produce within the settlement: this usually requires pedestrians to carry the loads, unless there are wheelbarrows, carts or bicycles

available for the task. Remarkably few older people in the survey referred to owning or using any form of cart [0% ever used a cart] or wheelbarrow [only one woman in the whole survey, no men, though a few references to wheelbarrow use were made in in-depth interviews]. Consequently, domestic loads are a major burden in daily life as the following data illustrate.

Water: In the dry season water transport is a particular problem, in the absence of piped water in most settlements [see above: only 9% of older people's households have water piped to the compound, and just 2% to the house]. Water has to be brought from locations over 30 minutes from the house in the case of 22% respondents, between 10 and 30 minutes walk from the house for 39% respondents. For a fortunate 33% respondents water can be accessed under 10 minutes from the house. Even this journey can be difficult for an older person, given the [20kg] weight of the standard 20 litre container used to carry water. One woman described how she carries a small water container on her back, putting it in a wrapper like carrying a baby, because of lack of strength. We asked whether anyone helps to carry water, given that this is usually a major daily task. 70% of women and 47% of men carried all their water themselves [men sometimes using a bicycle, according to our qualitative interviews]; the remainder had assistance from children, grandchildren and [where they do not have family nearby] neighbours: *My grandchildren are the ones I use to fetch water and firewood and sometimes [they help] to carry [my] farm produce to home.* [Man c. 90y, 4 great-grandchildren 14, 12, 8+ 7y]. Nonetheless, 43% of women and 30% of men said they carried water every day. The modal number of journeys with water for both women and men was two per day. For those OP without family living close by daily water collection can dominate the daily routine:

I don't have strength to go to farm but I try to fetch water. I don't have a child or grandchild here. I go just down there to the well. It takes quarter of an hour to fetch water – thirty minutes per journey. I do this three or four times a day. I have no problems on the way. But I can't carry a bucket like this so I carry in the gallons (brings out two gallon containers). I carry two but I cannot go all the way – I have to stop for rest and carry on, stop and carry on again. [woman c.80y, three children all dead, Vikuge]. When this woman is sick she depends on neighbours to fetch water for her. A few older people mentioned that they sometimes buy water from the bicycle vendors [notably in Vikuge].

Firewood: Since 94% of older people's households depend on firewood for fuel, this is clearly an important item for consideration in assessing domestic loads. Firewood in Africa is normally carried home just a few times each week, because it has to be brought over long distances from the farm or bush: it is often the heaviest load carried and in many regions is seen as a woman's load, unless it is being collected for sale. In the survey, 71% of women and 71% of men said they carry their firewood entirely by themselves: usually just one journey per day. It is remarkable that so many men are carrying wood, given the stigma normally attached to male carrying of wood in Africa. Nonetheless, more women than men talked about carrying firewood in in-depth interviews: *I carry the firewood on my head. I can carry 20 pieces of fire woods which lasts for 3-4 days. If it is the time of harvesting, I harvest slowly by myself I can use four hours [per day to] harvest.* [Woman 64y, living alone, Vikuge]. The qualitative data shows that older people find firewood extremely difficult to carry given its weight and many [especially the very old] tend to try to go out each day to find odd sticks and other biomass debris around the compound. In Vikuge and Kongowe, in particular, some buy wood or charcoal from passing dealers [men who carry the fuel on their bicycles]. However, according to the survey, 47% of

respondents overall have to travel over 30 minutes to find firewood. In Msufini the lengthy journeys now required for fuel-wood collection are attributed to the impact of charcoal burning [interview, settlement leader].

Rubbish is a much lighter load and is usually disposed of close to the house. 85% of women and 67% of men carried this entirely themselves.

Farm produce: Many older people carry water and fuel-wood entirely without assistance, but farm produce, by contrast, is usually carried by other family members, rather than by older people themselves: only 17% of women and 18% of men said they carried their own farm products, though 42% of women and 57% of men said they had travelled every day in the previous week to cultivate their fields [and may well have carried field produce home for domestic consumption]. It is likely that the farm produce carried by the respondents themselves [often cassava] is for home use, whereas farm produce carried for them by others is for sale.

The cassava farm is one quarter of an acre as I cannot afford to pay for labour to farm all the land [10 acres] I peel and dry the cassava on the farm so that when I bring it here it is lighter. I go to collect cassava about once a week. [Woman 62y, Vikuge]

Over a third of respondents' fields are located over 30 minutes walk from home. There seems to be little difference in distance to men's fields [37% over 30 minutes walk] and women's fields [39% over 30 minutes walk]. However, there is some variation between settlements: in Minazi Mikinda a majority of respondents' [60%] fields are over 30 minutes walk, whereas in Ngohingo only 5% respondents have to walk over 30 minutes to their fields. In Mwanabwito many older people have to cross the river to reach their farms and fear of crocodiles and hippopotamus was raised in a number of interviews. Women walk to and from the fields in all settlements, but those men who still ride a bicycle are sometimes to be seen travelling to the fields on them, and in some cases carry home small quantities of farm produce fastened to the cross bar. Others said they occasionally obtain a lift from relatives who drive boda-bodas and, in a few cases where harvest production is substantial, men report hiring a boda-boda to take their harvest home from the fields in 50kg bags [e.g. Minazi Mikinda].

Grinding mills are mostly located outside the study settlements and thus it is probably not surprising that 93% of women and 90% of men had not visited a grinding mill in the last week. Qualitative data show that it is usually children and grandchildren who undertake this task. Alternatively the grain is simply pounded at home.

Load weights and perceived impacts: Given the loads which older people have to carry for domestic purposes [particularly water and firewood], and potential implications of carrying heavy loads for health, it was important to ask in the survey for more information about loads carried and their impact.

Heaviest loads: For a majority of women, the heaviest load they had carried in the previous week was water [30.5%] or firewood [29.6%], with loads from the field [presumably mainly food for home consumption] the heaviest load in rather fewer cases [17.7%]. For men, the firewood was most commonly the heaviest load carried [46.2% of men], with much less emphasis on water [21.8%] than in the case of women, but slightly more reference to loads from the field [21.2%].

We asked for a rough approximation of the heaviest weight carried – the most common quantity cited was 20kg or 15kg [especially among older people in their 60s and 70s]. No discernible pattern was evident by settlement. The load type carried most *often* [as opposed to the heaviest load], was water for women and produce from the fields for men, followed closely by water. Almost no loads were carried for money.

Pain associated with load carrying: A vast majority of older people in the survey said they had experienced problems of pain [principally waist/back pain or headache] or tiredness which they associated with load carrying: 66% of women and 74% of men reported headache and 57% of women and 75% of men had waist/back pain in the week prior to the survey which they associated with load carrying. When asked about the main impact they associated with load carrying, the following responses were received:

MOST IMPORTANT LOAD CARRYING IMPACT IN WEEK PRIOR TO SURVEY	No problems	Head ache	Waist/back pain	Tiredness
F	22.2%	19.7%	29.1%	12.3%
M	13.7	12.2	43.5	13.7
Total	18.9	16.8	34.7	12.9

Waist/back pain problems appeared most prevalent in Ngohingo [53%] and least common in Vikuge [19%].

There are numerous references to back pain in the qualitative interviews:

In the past I used to carry up to 30kgs but now I can't due to my age and the back pains I have. [Woman 73y, Soga]

I do carry heavy loads like farm produce and firewood for cooking- almost 10kgs or 15kgs - the weight of loads increases especially at harvesting seasons. I suffer very much due to loads carrying i.e. bones pains and I go for treatments at the dispensary. [Woman 79y, Mwanabwito]

I carry heavy loads all the time, though due to my age nowadays I carry up to 20kgs but in the past I was able to carry even 30 -35kgs on my head. I do suffer ... back pain, headache and neck-ache. If it is serious I go to the hospital, if not I only take pain killers. [Woman 68y, Kongowe]

Interestingly, data collected in a previous project on children's load carrying suggests, in line with the survey data above, that males suffer more than females, even though they often carry less. This is possibly partly a matter of differential pain perceptions by gender, but also in some cases may reflect boys' and men's role as commercial porters:

In the past I used to carry heavy loads, of even 100kg because I was a labourer at Kariakoo market in Dar-es-Salaam but nowadays ... the load I can carry nowadays is 5-10kgs only.... My grandchildren and my wife are fetching water and fire wood for me. I think even the waist pains & back pains I have now is due to loads carrying I used to carry in the past at the market. In the

last six month I went to Mwanabwito dispensary for waist pains treatment due to loads carrying and I was given pain killers though they were not so effective. [Man 78y, Mwanabwito]

A response in the survey that ‘no problems’ are experienced from load carrying increases gradually with age, presumably because the older age groups are no longer expected or able to carry loads of any magnitude. However, it should be borne in mind that the oldest age groups comprise very small numbers of respondents and it seems possible that OP who have suffered most through load carrying are less likely to live into their 80s and 90s.

Livelihoods, well-being and transport beyond the village

We asked respondents in the survey about their attitude to the means of transport that they use – what features they like and dislike about each mode and any associated dangers. This drew attention particularly to older people’s experiences of using transport beyond the village area, and has important implications both for their livelihoods and well-being.

Pedestrian travel dominates journeys both inside and outside the village. The main advantage of walking is reported as its cheapness, and the biggest disadvantage as the fact that it is so tiring.

Cycling is predominantly a male activity. 72% of men and 35% of women report that they own a working cycle. The figure for women seems high, given how few women are to be seen cycling [and 82% below say they never use a bicycle], but this is probably because the cycles are used by their children and grandchildren. According to a male settlement leader in Msufini, for instance: *Women don’t ride bicycles...it is too far from here to Kongowe [to the maize mill] for a girl with a load so we are afraid to send a girl as may be boys will do something bad to them on the way.*

BICYCLES	Use every day	4-6X per week	1-3X per week	Less than once a week	Never use
F	0%	0%	2%	15%	82%
M	12	9	8	11	60

Bicycles are liked, we are told, principally because they are cheap to operate, but disliked because they involve effort in cycling. 61% of women [compared to 29% of men] observe the danger of falling off, and 25% of women [compared to 10% of men] the danger of falling sick [it is unclear whether women are referring here to gynecological problems, or the danger of rape when on a journey or to other reasons].

Given the widespread disparity in cycling between men and women, girls and boys, across Africa, we asked respondents whether they knew how to ride a bicycle – 89% of men responded in the affirmative, but only 9% of women – this supports the assertion above that even though women may own cycles it does not mean they necessarily ride them. Just 4% of women said they still regularly ride a bicycle, compared to 52% of men. We asked those who do not know how to cycle, why this is the case. For women the principal reasons were lack of a cycle [35% of all women respondents] and lack of time to learn [23%]. Only a few men were unable to cycle [7% of all male respondents], principally because of lack of a bicycle on which to learn.

Bicycle taxis: Qualitative interviews indicate that before motorcycle taxis were introduced, bicycle taxis were common, though the only reference to current use was at Msufini, where one 80-year old man still owns a bicycle taxi and rents it out to an operator for transporting people within the village area or for short journeys to Vikuge. In the survey, only 3 women and one man refer to ever using one.

Motorcycles/motorcycle taxis: Very few respondents, male or female in the survey said they drive a motorcycle [under 1% of both women and men]. However, motorcycle-taxis are now a principal means of transport in this area, especially in the 9 villages away from the paved road. In some cases it is reportedly former bicycle taxi operators who have moved into boda-boda driving; charcoal burners have also invested in buying motorbikes for boda-boda [e.g. interview, settlement leader, Msufini + interviews with boda-boda drivers]. Only 4 motorcycle taxis are owned by respondents [3 women, one man] but many respondents use them on a regular basis to travel to nearby settlements or to the roadside where they can catch a [cheaper] bus to more distant locations.

MOTORCYCLE TAXIS	Use every day	4-6X per week	1-3X per week	Less than once a week	Never use
F	0%	0.5%	31%	57%	12%
M	0	0	42	46	12

We also asked whether people had used a boda-boda in the week prior to the survey -18% of women and 31.5% of men had done so. There was no discernible age pattern, but usage was highest in Vikuge [where 45% of respondents had made a journey in the previous week] and lowest in Soga [where only 5% had made journeys that week].

The value of boda-boda is widely recognized by older people across the villages in the absence of alternative motorized transport – it not only allows travel beyond the village, but now also brings in goods which would otherwise be unavailable there: *bodaboda has improved my life ... now it is simple to travel to Mlandizi and even to transport the farm produce to town. Not only that, many goods are now available at our village - the business men can now transport various goods so we do not need to travel to Mlandizi frequently for shopping.* [Man 73y, Kitomondo]

The ‘never use’ category is commonest in Kongowe [32% never use], the paved road settlement, probably because here there are alternative, cheaper modes of motorized transport and the traffic makes motorcycle riding seem particularly dangerous. In Vikuge, at the opposite extreme, only 2 respondents had never used a motorcycle-taxi. However, even in Kongowe we found some keen proponents of boda-boda: *I like travelling by bodaboda because it takes me up to my home place... the buses [are more comfortable but] do not come up to our home places... and the buses are not available at the night time.* [Woman 62y, widow living with one daughter and 3 grandchildren of another child]

Motorcycle taxis are liked particularly because of their speed in terms of getting to places quickly, but are also disliked for the speed at which the operators drive them [noted as the prime

disadvantage by 39% of women and 36% of men]. Their other key disadvantage is cost [noted as their principal disadvantage by 39% of women and 42% of men]. The principal danger associated with the boda-boda is traffic accidents [noted by 73% of women and 79% of men]. Qualitative data expand this picture. A man [68y] in Ngohingo, for instance, observed: *you are at the risk of getting accidents. Also my legs have problems so it becomes difficult for me to sit the bodaboda. After the journey I can stay four days suffering with leg pains.* Similarly a 79 year-old man in Vikuge observed: *When there is a need to go to Kongowe, I use boda-boda but the drivers are so rough and sometimes after the journey I get so much pain - back and legs pains.* The biggest complaint about boda-boda however, in both the survey and qualitative interviews is its cost, especially at night time when fares usually rise substantially [as they also do when roads are particularly bad, e.g. after heavy rains]:

I have used bodaboda at the night time when I was called by my friend who lives at the side of the village- her son was seriously sick suffering from Malaria so I had to go see him, it is about two kilometers from here to my friend's house and the cost of transport was TSh1500 [that is] 500 shillings more than the normal price. [Woman 66y, Soga]

The road condition is very bad especially during rainy season, during that time bodaboda are not coming at our settlement because of the wet land with a lot of floods, muds so we have to walk a long distance to meet the bodaboda and at that time the cost of transport goes up. [Woman 77y, Kongowe]

Minibuses are clearly favoured by our respondents for their comfort [50% of women, 49% of men note this as the principal advantage] and their speed in getting to places [40% of women, 30% of men]. However, as the following table and qualitative data indicates, their availability is not high [by comparison with the motorbike taxis]. 11% of respondents noted their unavailability – this point was made in all the settlements apart from Kongowe. In qualitative interviews in Kongowe, the only settlement where minibuses present a viable alternative to boda-boda transport, respondents commented that minibuses are cheaper, but even here there are many poor roads which become impassable even for boda-boda in the wet season, so that there are places which only the boda-boda can reach: *On my side I like travelling by bodaboda because it takes me up to my home place. Travelling by buses or minibuses is more comfortable but it has some disadvantages - the buses do not come up to our home places...[and] are not available at the night time.*[Woman 62y, Kongowe]

MINIBUS	Use every day	4-6X per week	1-3X per week	Less than once a week	Never use
F	0%	0%	11.2%	48.5%	40.3%
M	0	0	13.6	47.0	39.4

Buses are also popular with respondents because of their comfort [[51% women, 46% men] and speed in getting to places [44% women, 41% men], but they are viewed as expensive [41% women, 49% men] and speeding was still seen as a danger [23% women, 19% men]. Again, 7% of respondents noted their low availability. Buses are used particularly for travel from Kongowe to Dar es Salaam: this journey costs TSh1,500 by bus, compared to TSh10,000 by boda-boda.

BUS	Use every day	4-6X per week	1-3X per week	Less than once a week	Never use
F	0%	0%	1.5%	40%	58%
M	0	0	1.5	33	65

Traffic accidents: Because of growing concerns about road safety we asked about traffic and travel accidents. 90% of women and 77% of men had never experienced a traffic accident of any type. 9% of men had had a cycle accident as had 1% of women. However, 2.5% of women and 4% of men reported they had had a motorcycle accident – given the relatively recent introduction of motorcycles in the area, this figure is of concern. There is no clear pattern in accidents according to age. Occasionally, descriptions of accidents were given in qualitative interviews: one man was burnt by the exhaust pipe ‘because I failed to sit properly’, another man fell off because he was dozing. More often the accident is associated with speeding [most of the drivers are young men who clearly enjoy travelling at speed] or with a muddy road:

I once got the road accident, I was travelling with bodaboda from Kongowe hospital back home and the bodaboda driver was at a very high speed so the car crushed us and we fell down. I was injured on my left hand - I got a bone fracture. I had to go to the hospital but my hand is now okay as you can see. [Woman 77y, Kongowe]

I once got a terrible accident with a motorcycle, I was on my way to my home place from Kongowe - we were two passengers on the same bodaboda, so three people including the driver. The motorcycle slid down and I was injured at my left leg leaving me with a very big sore and it was so much painful and sufferings - thank God my bones were not affected. On that journey I didn't put on a helmet, you know here at Misufini only the drivers wear helmets but the passengers no. I could feel good and safe wearing a helmet but the drivers have no helmet for passengers. [Man 80y, Msufini]

This latter quotation raises a major issue now associated with boda-boda travel – the widespread absence of helmet-usage among passengers. Drivers tend to own one helmet only [as required by law, but they commonly do not wear it and it is often of poor quality] – many say that their customers do not wish to wear a borrowed helmet in any case because of the danger of ‘fungus’ [an issue also raised by some older people who travel on boda-boda, though many say they would welcome a helmet]. In Kitomondo, the villagers have built ridges on the road at the edge of the village and in the middle, to prevent boda-boda speeding.

Livelihoods, transport and communications: the growing role of mobile phones

Mobile phones are now a key communication tool in the study settlements – they are used in place of transport i.e. where messages and discussions can be conducted by phone instead of through face-to-face meeting; to order transport i.e. boda-boda; and to send money. This latter is a feature of growing importance, especially since it allows children in the city to easily send money to their parents where the parents are looking after grandchildren [though many older people still expect their children or grandchildren to carry money to the village for them]:

I use M-PESA; my children usually send money through my chip (Vodacom-number) then they call my friend through his phone telling how much they have sent through my Vodacom-line, so I just go with my chip to the Vodacom shop to take money. [Man 66y, Vikuge]

However, even collecting the remittance may entail travel to town [e.g. to Kongowe from Vikuge, to Mlandisi from Minazi Mikinda] to find the agent who can pay out the funds. Phone units and phone charging [often using solar panels] is available locally in the village, but at a cost [usually around 300 sh to charge a phone]: it is reportedly more expensive to buy units in the local shops in remoter villages and ‘beeping’ of relatives in town seems to be a quite common strategy to reduce costs. In interviews some older people said they don’t use a phone often because they can’t afford the phone credit [e.g. woman, early 80s Ngeta]: one man in his late 90s Ngeta observed that although has a cell phone but he doesn’t use it: *it is locked in the cupboard. I cannot handle it because it is expensive, it cost me TSh300/- to recharge its battery and TSh. 1000/- to buy airtime, at times I buy TSh2000/- airtime, I can’t afford spending this much on just a cell phone.* Surprisingly, we have only one reference to an older people making an income from phone services, a man in his late 70s in Kitomondo who is sent credit to his phone by his brother and then sells it on to fellow villagers.

Access to mobile phones: 49% of women and 58% of men say they have a phone in their own home which is available for them to use, even if it is not owned by them. [Just 3 women reported that, despite the presence of a phone in their household, this was unavailable to them.] The highest level of ownership was found in Kongowe, Ngohingo and Vikuge, where only 24%, 26% and 26% respectively did not live in a household with a working phone [and in Kongowe one man of 60, a chicken dealer, owns two phones]. The lowest levels of household phone ownership were in Minazi [58% without a phone], Ngeta 58% and Mwanabwito 56%. However, even where OP do not have a phone in the household, it is common for them to have access to that of a neighbour or friend:

When I want to communicate with my children I just feed my Vodacom chip with credit then I put to my friend’s phone and call. [Man 66y, Vikuge]

Levels of phone use were as follows:

USEPHONE	Never use	Used last week	Not used last week but used last month	Only used over a month ago
F	12%	48%	23%	16%
M	7	62	24	7

The highest usage in the week prior to the survey was in Kongowe [68%], Boko Manamela [64%] and Vikuge [63%]. A small number of older people said they were unable to use a phone either because they could not hold it [for instance, a woman with leprosy] or because of deafness.

Ownership: Only 15% of women own their own mobile phone, but 41% of men own one. In qualitative interviews gifting by children or grandchildren was often mentioned. The majority of women borrow the phone of a household member [37%] or another relative or friend [33%].

Men without a phone borrow from another household member [18%] or another relative or friend [34%]. The highest personal ownership is in Vikuge and Kongowe [42% of respondents in each settlement]. The lowest recorded personal ownership is in Kitomondo where only one respondent owned a mobile phone [though phones are accessible here through family and neighbours].

Now you can get a handset for Tsh20,000 so it's affordable. Before they were more expensive. Even me, I have a phone. Most older people have phones now. They call their children who are far away. If you don't remind the children they forget you and your needs. [Man 71y caring for 5 young orphaned grandchildren, Msufini]

Purposes: The reasons given for phoning over the last year in the survey were diverse and often cover numerous categories [social calls, health-related, urgent news, emergencies etc.] In qualitative interviews we very occasionally heard of specific economic activities facilitated by phone, such as the woman tobacco seller in Vikuge who organizes supplies from her grandchildren in town by phone. The largest single category was social calls [33% for women, 35% for men], with an additional 10.5% of women and 5.5 % of men saying their calls were principally about social matters plus health. This pattern of multi-purpose calls is common across Africa.

In qualitative in-depth interviews with older people, the importance of the mobile phone was a common theme: *Mobile phone helps me a lot especially when I am in need of money from my children who are in town.* [Married woman, 61y, caring for 2 grandchildren, 4y and 3y] However, there were also occasional concerns expressed that the mobile phone call is sometimes at the expense of personal visits, an issue which has been raised elsewhere: *Phone has changed travel patterns, in the past my children and other relatives used to come to greet me but now they just call.* [Widow, 80y, lives with children+ grandsons]

In terms of transport organisation, the combination of boda-boda services with mobile phone access has had remarkable impact over the last few years.

I do not have a phone but my neighbor has a phone and the boda-boda so in case I want to call my children I use that phone and when I want to travel with boda-boda I just consult him. [Man, 70y, Ngeta]

I have a phone and in my phone contact I have one number of one a boda-boda driver who I usually call in case I need boda-boda. [Widow 67y, Ngeta]

I do not have a mobile phone but my son has so in case I want to call I use that phone, my son have numbers of boda-boda drivers whom we call in case we need to travel. [Woman, 82y, Kongowe]

It is clear that even though many older people do not enjoy travelling by motor cycle taxi, when used in conjunction with mobile phones it offers enormous benefits, in terms of timeliness and speed of service. Moreover, a number of respondents observed in the qualitative interviews that they travel less overall than used to be the case, because of their access to phones:

Nowadays I don't go far or walk far to see my granddaughters and my in-laws; I call them and greet them or even ask them for financial assistance. [Woman 73y, Soga]

I don't have to travel so much nowadays - may be when there is a funeral or a crucial thing for me to travel, but for minor things I use my brother's phone and we talk. [Woman 66y, Soga]

Nowadays I don't travel much to go to my children in town, instead we talk [on the phone] and solve our problems where possible [Woman 78y, Mwanabwito].

THE INTERCONNECTIONS BETWEEN RURAL TRANSPORT, HEALTH, LIVELIHOODS AND WELL-BEING: REVIEW AND PROSPECT

Transport is clearly a major hurdle for many older people in the study settlements – most particularly for their daily domestic water and fuel needs, but also for their access to health services. Transport, health, livelihoods and well-being are interconnected in many respects. The long distance to water points is of particular concern, given older people’s limited capacity to carry much water, since insufficient water access will contribute to water borne diseases including digestive problems, while limited awareness of hygiene associated with prevailing low education levels is likely to increase exposure to infection: the knock-on impacts of health may be considerable. Meanwhile, the prevailing poverty which results from low agricultural production and poor access to good markets (also associated in part with transport constraints) is likely not only to reduce nutritional status but also to impact on factors such as the ability to buy mosquito nets – hence probably contributing the high incidence of malaria. However, the relationality between older people and their children and grandchildren (which has important implications in a mobility context), is a key redeeming feature for many households. Many older people are caring for grandchildren; at the same time, their locally resident children and grandchildren assist them too in very many ways - older people often gain access to goods and services, including medicines, domestic needs etc., indirectly through both adults and children in the community. However, for those without immediate resident family, conditions can be harsh.

Respondents have spent much time in answering our questions - it is important that we respond adequately to their problems and concerns. As one respondent said:

We have lots of people coming here and we have nothing. So we lose faith. This must be the fifth time. They say “It’s not us, it’s another organisation.” They go and they come again, passing house to house. They say they are dealing with older people but when we are ill and we go to the dispensary..... Even for this dispensary they came to ask us about road, water, hospital. They made a list and we selected dispensary and the dispensary was built [but doesn’t answer OP’s needs]. I understand that you are not bringing these things – you are looking for information.

Although our principal focus in this field work has been to pursue a research agenda, and – as the respondent’s comment illustrates- great care was taken by the field researchers to emphasise this point, it is important that we use the information collected, in collaboration with key stakeholders at national and local level, to develop an agenda for action. We started this process at the workshop held in August, but it will need concerted action by HelpAge Tanzania, REPOA and GSSST in the coming months to ensure further progress is achieved.

Review of hypotheses: We suggested a number of hypotheses when we started this study regarding older people and transport/rural access issues. For each point below, we consider the implications of our preliminary field findings:

1. Older people may face numerous difficulties when they are able to access public transport. Some of these difficulties are probably similar to those reported by children in the child mobility study cited above (harassment, being cheated on fares by operators, having to stand up and keep balance in an unstable vehicle when all the seats are taken etc.) Older travellers may also face other difficulties around specific problems

sometimes associated with old age such as urinary incontinence among women due to earlier obstetric problems (e.g. obstetric fistula and related conditions).

We found little evidence of harassment or cheating on fares, but the difficulties and cost of travel by the main available transport mode in areas beyond the paved road –the boda-boda- are substantial for older people.

2. The mobility and access constraints experienced by older people may impact negatively not only on themselves but also on the educational, health and livelihood opportunities of children and young people in their care and thus reduce overall long-term potential for poverty eradication. For instance, mobility and access constraints are likely to impact strongly on older people's ability to earn income, with consequent impact on their ability to feed, clothe and educate children. Access to livelihoods has been inadequately considered in an older people's context (they are often treated by government, academics and others as if they are outside the working population but they need livelihoods to survive).

Older people's livelihoods in the survey area are principally built around farming. Most do not cultivate all their land because of limited resources and strength. Arguably, their energy/strength available for farming is much reduced by the transport needs associated with obtaining domestic water and fuel supplies and, in many cases, the care of grandchildren [whether they belong to children now living in town, or are orphaned]. Grand children in their care often help before or after school, but many older people are careful not to impinge on children's school time.

3. Older people may gain access to services not only directly but also indirectly through both adults and children in the community. The relationality between children and older people's lives has been considered in general terms (e.g. Whyte et al., 2004; Hopkins and Pain 2007), but requires analysis in a mobility context (see Turner and Kwakye 1996 for a rare study of Accra). Thus, impacts on older people of other households and community members' mobility both need to be considered, especially regarding migration, which may affect indirect access to services via family helpers.

Many older people's lives and mobility patterns in the study settlements are intimately bound up with other adults and children. In some cases older people have to care for and in large part support young grandchildren [though it is rare to accompany them to school. N.B. one woman farmer of 62y in Vikuge reported taking her grandchildren to and from school in Kongowe each day on a hired boda-boda]. In turn, young people carry their messages, collect medicines, go to the grinding mill, help carry water and firewood etc. There is a symbiotic relationship in a difficult context [the need for young adults –the parents - to migrate to the city for work, plus high incidence of HIV/AIDS] which in large part probably benefits all concerned.

4. In some regions the demands of load-carrying on women from childhood and onwards appear to impact severely on health and quality of life as they enter and experience old age (though we are unaware of any published evidence base to support this hypothesis). The implications of Africa's transport gap and consequent dependence on pedestrian head-loading (often designated a female activity), has received remarkably little attention.

The particular plight of older women in accessing fuel wood, water and markets needs further investigation.

Load carrying is surprisingly prevalent not only among women but also among older men in the study settlements. Water and fuel loads present a major transport burden for the younger cohort of older people [those in their 60s and 70s] and carrying is associated particularly with waist/back pain.

5. Road traffic accidents are a major cause of injury and death across Africa. Older people are likely to be at disproportionate risk because of age-related physical and cognitive changes (Amosun et al. 2007, Mabunda et al. 2008). *Road traffic accidents were only rarely reported in our study settlements and few involved older people: nonetheless, given the short period within which the boda-bodas have been in operation, this is potentially a very significant issue. The boda-boda drivers who are the main transport operators are mostly young men and the group most susceptible to accidents. Many OP say they insist on the driver travelling slowly, and many young drivers say they take particular care when carrying older passengers, but accidents have already occurred.*
6. Very old and infirm people, in particular, may face a lack of power and access to wider decision-making processes (similar to that experienced by children). Their views are then less likely to be heard and their transport and mobility needs even less likely to be met than those of other groups.
Many older people are in charge of their households and grandchildren in the absence of their children and thus arguably have significant decision-making powers, though this has to be balanced against the highly resource-constrained context in which most live and make decisions. Many older people suggest they have little opportunity to express their needs at community level. A number said they had no wish to participate in older people's community groups [e.g. Soga interview 5] – in some cases this seems to be due principally to lack of funds.
7. We can expect considerable diversity of experience amongst older people, according to age, gender, ethnicity, socio-economic status, family composition (dependants etc.), occupational history, infirmity/health, personal mobility status, density of service provision, etc. It is important to assess how this diversity impacts on transport usage, suppressed journeys, mobility, access to services and other elements important to older people's well-being.
The diversity of older people's experience has some impact on transport usage, most notably perhaps in terms of socio-economic status [most are relatively poor compared to the community average, but there also appear to be a few with above average wealth in many and possibly all, settlements], but also regarding the differences between those living in settlements close to the main paved road [especially Kongowe and Vikuge] and those living in remote settlements poor road access and consequently limited transport services. Gender seems to be a less significant factor shaping transport access than in many West African contexts, despite the majority Moslem population in Kibaha district. The impact of age is difficult to assess from the survey data, in part because numbers in the higher age groups are very low. The qualitative work suggests that while the very old

are mostly highly immobile, they commonly receive substantial mobility support from family and – where family are absent- neighbours and the wider community.

8. Potential routes to improving mobility among older men and women are likely to differ from those open to younger people in their communities. Bicycles usage, for instance, may be impossible for older women who have never had time/opportunity to learn to cycle. Older people with disabilities are particularly disadvantaged, such that even mobile service provision to settlement centres may not serve them adequately: adapted wheelbarrows with invalid seats might assist in some contexts (Grieco 2001).

Boda-boda has effected a transport revolution over the last few years in many of the study settlement [especially where it operates in conjunction with mobile phones]. In the absence of alternatives it has brought improved mobility – at least in emergency contexts – even for very old people, despite the high fares. It is important to explore if/how boda-boda might be adapted to make it safer and more comfortable to older people in the study settlements, and to examine feasible alternatives, especially in the context of travel of sick older people to health centres. Descriptions of sick old people’s widespread travel to clinics and hospital by motorcycle taxi (especially in areas away from the paved road), sandwiched between the driver and a relative at the back to keep them from falling off, have to be of concern to transport and health professionals. Attention also needs to be given to domestic water and fuel transport and the means by which this can be improved, so that older people are able to reduce their carrying burden and, should they wish, devote more effort to their farms. Through improved food availability, this could have important impacts on health for both older people and those in their care.

9. Ill-health and infirmity may introduce further problems for older people, in a walking world where pedestrian transport dominates among all ages (Porter 1988; 1997; 2002a). Reduced pedestrian mobility due to infirmity and the unaffordable cost of motorised transport may help to limit older people’s access to work and vital health care, thus reinforcing their poverty: a vicious circle in which mobility restrictions form a key component. At the same time, care-giving responsibilities of older people (especially women), who have adult children affected by HIV/AIDS may require prolonged travels to care for the sick (Ssengonzi 2009).

The pattern of infirmity limiting many older people’s access to work and vital health care is evident in all the study settlements. Lack of funds to pay for boda-boda means that many sick OP have to walk long distances to the health centre, despite illness - though in emergency situations, communities will often offer assistance. The imposition of user fees at the health centres [even though older people over 60 years are supposed to be treated free] when compounded by high transport costs and a difficult journey seems to substantially reduce older people’s efforts to access to health services. The district is located close to Dares Salaam city and some older people appear to travel regularly to the city to visit family members: travel to undertake care of the sick is not mentioned in interviews [though there is frequent reference to travel to funerals].

10. In the context of limited work potential, ill health and lack of social security, social bonds are likely to be essential to securing care and financial support in old age. In many

African societies, giving money is a way younger kin traditionally pay respect and show affection and care for the elderly, but when the younger generation has migrated elsewhere, it may be difficult for older people to achieve the sustained interaction necessary to maintaining such links. In particular, where parents are alive and resident in town, they may prefer to keep their working-age children with them, rather than sending them to help a grandparent in a remote village. Again, mobility and access to affordable transport are likely to be key factors in sustaining social networks, though it is possible that mobile phones also now play a growing role in this respect.

Many of the younger generation in the study settlements have migrated to Dar es Salaam. However, their children often reside in the villages with grandparents and this pattern of stretched households seems to actually contribute to sustained interactions between town and village. Mobile phones have become a key element in maintaining such family (and other) social networks: this is strongly evident from our field study findings. Thus, although some older people suggested that their travel has reduced as a result of mobile phone access, overall levels of interaction between distantly located family members seem strong.

11. There appears to be considerable potential for mobile phone use (expanding dramatically across Africa) to substitute virtual for physical mobility to the advantage of older people in health and other contexts: current and potential uses among older people need investigation.

As noted in 10 above. This particularly impacts on access to boda-boda transport services, and consequently on speedy access to health services in emergency: it also has relevance in other emergency contexts and potentially perhaps for organising transport of farm produce to market.

BROADER IMPLICATIONS FOR NATIONAL RURAL TRANSPORT SERVICES

The findings from this small study may have important implications for national rural transport services. The following points are particularly relevant:

The significance of older people's transport needs

Many older people's lives and mobility patterns in the Kibaha district study settlements are intimately bound up with the lives and mobility patterns of other adults and children: this is likely to be the case across much of rural Tanzania. HelpAge's experience of work in other rural areas in Tanzania suggests that many older people live in similar contexts of limited resources and substantial caring responsibilities. There is often a symbiotic relationship between generations which allows people to cope in difficult situations [the need for young adults –the parents - to migrate to the city for work, plus high incidence of HIV/AIDS] - in large part this probably benefits all concerned. Attention to older people's transport needs is thus important, not only for assisting that age-group, but for assisting the grandchildren and other young people in their care and for the lives of their children living elsewhere: it thus has very wide implications for national development.

The importance of recognising the diversity of user transport needs

The diversity of older people in the survey area in terms of gender, age and socio-economic status substantially affects their ability to access transport services. This point has wider application to other rural areas and other groups of transport users: it is important not to assume homogeneity in user needs even by age, gender etc.

In terms of *socio-economic status*, most older people we interviewed are relatively poor compared to the community average, but there also appear to be a few with above average wealth in many and possibly all, settlements: this obviously affects ability to pay fares. There were also important differences associated with *residential location*, especially between those living in settlements close to the main paved road [especially Kongowe and Vikuge] and those living in remote settlements with poor road access and consequently limited transport services. *Gender* seems to be a less significant factor shaping older people's access to transport than might have been predicted though it particularly affects bicycle usage in the wider population. The impact of *age* within the wider older people age category is difficult to assess from the survey data, in part because numbers in the higher age groups are very low. The qualitative work suggests that while the very old are mostly highly immobile, they commonly receive substantial mobility support from family and – where family are absent- neighbours and the wider community. However, differential access to transport and mobility, across age groups, requires emphasis.

Transport interventions needed to reduce current domestic transport burdens

Older people's livelihoods in the survey area and elsewhere in rural Tanzania are principally built around farming. It is likely that in many regions a similar situation pertains to that in

Kibaha whereby most older people do not cultivate all their land because of limited resources and strength. Arguably, their energy/strength available for farming is much reduced by the transport needs associated with obtaining domestic water and fuel supplies (and, in many cases, the care of grandchildren, whether they belong to children now living in town, or are orphaned). Grand children in their care often help before or after school, but many older people are careful not to impinge on children's school time. We thus found load carrying surprisingly prevalent not only among older women but also among older men in the study settlements: again, observation suggests this is also a widespread phenomenon. Load-carrying presents a major transport burden for the younger cohort of older people [those in their 60s and 70s] and is associated particularly with waist/back pain which reduces capacity for farm work and other occupations.

It is important to explore the potential to make interventions that can aid load carrying for domestic purposes [notably water and fuel wood carrying] or which substitute load carrying with improved accessibility to water and firewood: such interventions could substantially improve the lives of rural older people and their families, not only through freeing time for more productive activities including farming but also by reducing the pain and exhaustion associated with carrying heavy loads. Moreover, it is important to point out that the domestic load-carrying burden also affects younger age groups, with potentially damaging effects: interventions focused on older people are also likely to help other age groups. Efforts to reduce people's pedestrian transport burden so that they have to do less transporting of water and wood themselves and are thus less likely to fall ill as a result of the carrying burden would probably be best focused on IMT [Intermediate Means of Transport] interventions [possibly including adaptation of motorcycle taxis] for carrying intra-village water and firewood and/or increasing the number of boreholes and local firewood plantations so as to reduce the distances.

Inter-village and regional transport services: the role of motorcycle taxis

Motorcycle taxis have effected a transport revolution over the last few years, not only in our study settlements [especially where they operate in conjunction with mobile phones] but also, from observation, in many other parts of rural Tanzania. In the absence of alternative modes of transport in off-road areas in particular, older people – along with other age groups- are increasingly taking advantage of this development, despite the relatively high fares charged. They are proving particularly beneficial in emergency health contexts when a patient needs urgent transport to health services. However, a) these services do not cater well for the specific needs of older people; b) our study pointed to many wider issues associated with the expansion of motorcycles taxis.

- a) *Older people's transport by motorcycle taxi*: The difficulties and cost of travel by this, the main available transport mode in areas beyond the paved road, are substantial for older people, especially when they are unwell or need to carry goods such as farm produce to market.
 - (i) It is important to explore if/how boda-boda might be adapted to make it safer and more comfortable to older people, and to examine feasible alternatives, especially in the context of travel of sick older people to health centres. Descriptions of sick

old people's widespread travel to clinics and hospital by motorcycle taxi (especially in areas away from the paved road), sandwiched between the driver and a relative at the back to keep them from falling off, will be of concern to transport and health professionals. Modified seats and / or use of trailers attached to motorcycles in which sick people can be transported should be explored.

- (ii) Lack of funds to pay for boda-boda means that many sick older people have to walk long distances to the health centre, despite illness - though in emergency situations, communities will often offer assistance. The imposition of user fees at the health centres [even though older people over 60 years are supposed to be treated free] when compounded by high transport costs and a difficult journey seems to substantially reduce older people's efforts to access to health services.
- (iii) Road traffic accidents were only rarely reported in our study settlements and few involved older people: nonetheless, given the short period within which the boda-bodas have been in operation in these villages, this is potentially a very significant issue and with widespread implications across rural Tanzania, wherever boda-boda is now prevalent. The boda-boda drivers who are the main transport operators are mostly young men and the group most susceptible to accidents. Many older people say they insist on the driver travelling slowly, and many young drivers say they take particular care when carrying older passengers, but accidents have already occurred in the study area.
- (iv) Older people tend to produce only small farm surpluses for sale, and have difficulty transporting their produce to market because they cannot ride on the boda-boda and carry their load at the same time with ease. Consequently, many older people obtain very poor prices because they have to rely on farm-gate sales. Cooperative transport/marketing arrangements for farm crops, possibly using boda-boda operators in the bulking process, could improve their access to markets and improved prices i.e. contracts for boda-boda to collect from farms and take to a central bulking point – then onward lorry transport [and all utilizing mobile phone communication].
- (v) Since, in the short term, boda-boda will be the most available, relatively affordable, relatively all-season transport for older people needing to access health services in areas away from the paved road, a pilot action research study would be valuable [i.e. possibly a community-run emergency health service, with a small fund to provide fares for emergency treatment, together with mobile phone access to boda-boda and an improved boda-boda passenger seating arrangement].

b) Broader issues associated with the expansion of motorcycle taxis

Our interviews with boda-boda drivers and other key informants, as well as older people themselves, drew attention to many wider issues associated with motorcycle taxi operations across communities at large:

- (i) Road safety issues associated with the expansion of motor-cycle taxis are a growing concern in Tanzania. Advanced training is needed for boda-boda operators on road safety and carrying vulnerable passengers [speed, driving on rough roads, use of helmets etc.]. The helmet-wearing issue needs particular attention: many drivers only have one helmet and even this may not be worn. Concerns among drivers and their passengers about catching skin diseases [‘fungus’] from shared helmets is widespread. Perhaps a washable cotton lining could be locally made and sold to individuals at low cost so they can use this underneath the helmet and thus avoid the feared ‘fungus’/ skin infections etc. from sharing a helmet with others [helmet liners are used in UK – see Silverstone experience website]. Regarding those concerned with the helmet spoiling their hairstyle, perhaps a new hair style designed for riding the boda-boda is required!
- (ii) Improved medical transport referral services for transfer of sick patients [whether elderly or young] from local clinics to the regional hospitals are required. These might include the development of adapted motorcycle taxis for improved use by vulnerable groups i.e. with seat improvement/ back safety sling/harness or a more advanced ambulance trailer/tricycle [such as the type DevTech are currently piloting in Zambia for AFCAP or the eRanger ambulances produced in South Africa].
- (iii) The introduction of mobile nursing services i.e. regular [weekly?] nurse transport to villages without clinics using local [but better trained] boda-boda operators could help substantially in providing timely treatment and thus reducing the need for emergency trips. [And/or explore provision of a once-weekly transport service with suitable 3 or 4-wheel vehicle - easy to board, comfortable- to the nearest district health facility for older people and other vulnerable groups such as the disabled.]
- (iv) Development of community arrangements towards improved emergency night transport are needed in remoter settlements. These could be based on designated community cell phone links with a small number of local private boda-boda operators, drawing on experience from northern Nigeria of private sector transport support currently being used to increase rural women’s access to emergency maternal care.
- (v) Road engineering focused on improving rural roads with specific reference to motorcycle taxi usage appears to be rare [i.e focused particularly on improving 2-wheel vehicle access]. Insufficient attention has been paid as yet to road access for motorcycles, given their massively expanding role in Tanzania’s rural transport system. Petts (Rural-transport-development network 18/9/2009) notes

that cycles need a firm, cambered running surface and that loaded cycles have a high ground pressure which can cause problems in the rains, especially on black cotton soils. He refers to personal observations from Vietnam where communities have constructed their own [1.4 metre] motorcycle roads of concrete which can allow two motorcycles to pass at normal speed, and 0.5 metre concrete or fired clay brick tracks in remote areas where cycles are unlikely to have to pass each other regularly.

Other relevant transport-related interventions

Community 'Transport to health' clubs [similar to funeral clubs] where small regular contributions are made by individuals and/or the Tanzania Social Assistance Fund towards emergency hospital transport could help older people and other vulnerable groups to prepare for health emergency expenditures.

Discussions with local bus/minibus transport providers are needed regarding improved seating for elderly/sick/disabled passengers, assistance with boarding/leaving vehicles, easier boarding steps/low floor vehicles, more pick-up and drop-off points.

Respondent suggestions towards improved transport and access to services [i.e. from older people and other local stakeholders in the 10 settlements] tended to focus around supplementing the boda-boda services which are now widely available with minibuses and buses which older people widely view as more comfortable and safer for travel. However, in the context of limited government resources for subsidized services, this strategy seems unlikely to be feasible. However, their other major suggestion - for road improvements - is an important one.

The role of mobile phones for improved transport services and as a transport substitute

Mobile phones have become a key element in maintaining family (and other) social networks: this is strongly evident from our field study findings. There appears to be considerable potential for mobile phone use (expanding dramatically across Tanzania) to substitute virtual for physical mobility in many areas, to the advantage of all i.e. in health and other contexts: current and potential uses need further investigation. Mobile phone usage is already impacting on access to boda-boda transport services, and consequently on speedy access to health services in emergency: it also has relevance in other emergency contexts and for organising transport of small loads of farm produce to market. It may be possible to reduce the need to travel for health care through direct m-Health care via mobile phones. According to UNFPA "Tanzania is setting the stage worldwide for integrating mHealth as a component of the national health system", - there is a working group on m-health involving NGOs like DTree International under the Ministry of Health.

Other non-transport interventions which would complement these measures

Though not seemingly a direct transport intervention, the key intervention needed to *reduce people's travel* for health is improved medical supplies at local clinics i.e. to reduce the need for patient travel to other locations.

Other means are also needed to increase the affordability of boda-boda and other transport [such as carts and wheelbarrows for domestic transport] among older people and other commonly disadvantaged groups. Older people-friendly income generating activities such as local chicken rearing may be worth investigation [HelpAge Tanzania has successful stories from Songea in Southern Tanzania where older people had raised income in diverse ways including agriculture, animal keeping and small businesses with the assistance of grandchildren living with them].

If the long awaited universal pension system is put in place, it will provide older people with the much needed income to meet their basic needs including access to health care with increased ability to pay for transport and medication. Furthermore regular income will enable older people to build assets hence increasing their ability to engage in livelihood activities for improved income and food security.

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